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CAUSATION OF ECZEMA, URTICARIA AND ANGIONEUROTIC EDEMA

BY PROTEINS OTHER THAN THOSE DERIVED FROM FOOD: STUDY XVIII *

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In 1912, Talbot and Towle,[1] from a study of the stools of eczematous patients, concluded that foods played a considerable part in the causation of eczema; the fats and starches as well as the proteins were concerned. In 1916, Blackfan[2] called attention to the association of eczema with asthma in children who were sensitive to foods. McBride and Schorer[3] found that in predisposed persons certain food proteins caused urticaria and erythema. White[4] noted the anaphylactic phenomenon in eczema, and a year later[5] (1917) he no longer doubted the fact that food constituents (protein, fat and carbohydrate) play some rôle in the abnormal composition of individuals afflicted with chronic rebellious eczema. Urticaria following the ingestion of certain foods and the injection of serum is a common occurrence. Since it would seem to be an established fact that foods may and do cause eczema and urticaria in some persons, cases illustrating such instances will not be given here. Suffice it to say that in our study of bronchial asthma we have frequently observed the association of eczema with asthma in patients who were sensitive to various food proteins, and we have definitely proved in some cases that urticaria was caused by food proteins.

In this paper I shall present instances in which eczema, urticaria and angioneurotic edema were produced by proteins which are not foods, but with which persons intimately come in contact throughout life, and which so far have not been recognized as possible causes of these conditions: four cases of eczema, two of which were caused by the proteins of horse dandruff, one by the pollen of timothy and one by the pollen of ragweed; five cases of urticaria, two of which were caused by horse dandruff proteins and three by ragweed pollen, and three cases of angioneurotic edema, caused, respectively, by timothy pollen, flaxseed and ragweed pollen. With the exception of one patient who had hay-fever, all of the patients had bronchial asthma, and the asthmatic condition was caused by the same proteins that also caused the eczema, urticaria and angioneurotic edema.

* From the medical clinic of the Peter Bent Brigham Hospital.

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PROTOCOLS OF PATIENTS WITH ECZEMA

CASE 1.—W. P., aged 11, had bronchial asthma and eczema continuously since he was 1 year old. He could not ride behind a horse without having asthma. The eczema was dry and scaly, and was present all over his body with the exception of his face.

Cutaneous reactions were positive with the pollen of ragweed and with the proteins of horse dandruff. The alkali metaprotein and the peptone of horse dandruff gave positive reactions in a dilution of 1:1,000 and the coagulated protein gave a positive reaction in a dilution of 1:10,000.

The patient was treated subcutaneously at weekly intervals with gradually increasing amounts of horse dandruff coagulated protein in a dilution of 1:100,000. After a few such treatments the patient noticed that when he bathed there was much less desquamation all over his body, and his forearms were practically free from eczema. Riding behind horses no longer caused asthma.

CASE 2.—M. T., a girl, aged 15, had bronchial asthma for nine years. Although she had asthma all through the year, it was worse in summer, when she also had hay-fever. She had eczema on the hands every summer.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:5,000, and with horse dandruff peptone in a dilution of 1:1,000.

After a series of treatments with ragweed pollen in gradually increasing amounts, the patient had no asthma, hay-fever or eczema during the ensuing summer. Following the completion of the ragweed treatments, a series of subcutaneous injections with horse dandruff peptone were given. During twelve weekly injections of the peptone in a dilution of 1:10,000, no untoward symptoms were noted. The dilution of the peptone was then increased to 1:1,000, and each week the amount of this dilution was slowly increased. After a few of these treatments the patient began to have eczema on her forehead; this gradually spread and resisted all medication. It was thought advisable to omit treatment with the peptone and all medication for the eczema. After one week there was marked improvement in the eczema, and two weeks later the eczema had practically disappeared.

CASE 3.—C. S., a girl, aged 10, had asthma since she was 2 years of age. The patient had eczema continuously between the ages of 1 and 2, and she had had it off and on ever since.

Cutaneous tests were positive with the proteins of horse dandruff in dilutions of 1:10,000 and with the pollen of timothy in a dilution of 1:500.

The patient was treated subcutaneously fourteen times in as many weeks with horse dandruff alkali metaprotein, first a 1:100,000 dilution, later a 1:10,000 dilution and finally a 1:1,000 dilution being employed. During this treatment the

patient was free from symptoms, including asthma and eczema. In anticipation of the pollen season, the patient was given during April and May subcutaneous injections of timothy pollen, first in a dilution of 1:1,000, then 1:500 and finally in a dilution of 1:100; this was in conjunction with the horse dandruff treatment as outlined above. After five doses of the timothy pollen, the patient complained of very troublesome eczema, which was similar to what she had had previously. She said that it began to appear after the third timothy injection, that it was gradually getting worse, and that it was most marked the next day after the injection. The eczema was very itchy, scaly and dry, and it was present on the back and under the knees and at the bends of the elbows in the antecubital fossae. Further injections with the timothy pollen were discontinued, but the horse dandruff treatment was continued. The eczema gradually disappeared; in two weeks the patient's back was free from eczema, and in four weeks the knees and arms became free. The patient was still being treated with large doses of horse dandruff protein.

Case 4.—A woman, aged 65, always had bronchitis and eczema periodically; the eczema appeared each year during the latter part of the summer, and at this time she had bronchial asthma.

Cutaneous tests were positive with ragweed pollen only.

Previous to the cutaneous tests the patient's physician had considered ragweed pollen as a cause of eczema in this case, since she was free from it, provided she kept out of her garden, which was surrounded by ragweed. After the positive test had been obtained with ragweed pollen, the patient was allowed to go in her garden with her hands and arms covered with cloth. In spite of this protection, during the latter part of August when the ragweed pollen is being shed, the patient had a little eczema. She was then not allowed to go into her garden at all, and the eczema entirely disappeared for the remainder of the summer.

In the first case there would seem to be little doubt that horse dandruff played a part in the causation of eczema, since improvemnt in the eczema was quite rapid during treatment with small amounts of horse dandruff protein. The same was also true of the asthmatic condition. Judging from our experience with Case 2, we should anticipate that sooner or later when large amounts of horse dandruff protein are given an amount will be reached which will make the eczematous condition worse. In Case 2 there can be no doubt that the subcutaneous injections of horse dandruff protein caused the eczema, since it appeared during the treatment and since it disappeared when the injections were discontinued. Small amounts of the protein, however, did not cause eczema; therefore it may be possible to treat eczema satisfactorily with very small desensitizing doses of the offending protein. The two cases represent two different channels of exposure to the protein; the first patient had eczema from natural exposure to horse dandruff, and the second patient had eczema when the protein was introduced beneath the skin. In other words, in the first case the offending agent was outside the body, and in the second case it was inside the body, thus simulating food in the causation of eczema. In Case 3 there can be no doubt that timothy pollen protein caused eczema, since the eczema appeared during subcutaneous injections of the pollen, it was worse soon after each injection, and it disappeared soon after the injections were omitted. Horse dandruff proteins played no part in the causation of eczema, since injections of these proteins were continued while the eczema was clearing up. It is quite probable that previous attacks of eczema were caused by exposure to timothy pollen. In Case 4 it is quite evident that ragweed pollen caused eczema through natural exposure by contact with the pollen.

PROTOCOLS OF PATIENTS WITH URTICARIA

Case 5.—F. I., a boy, aged 7, had bronchial asthma since he was 8 months old.

Cutaneous tests were positive with horse dandruff peptone and coagulated protein in dilutions of 1:10,000, and they were doubtfully positive in a dilution of 1:100,000.

The patient was given at weekly intervals six subcutaneous injections with horse dandruff peptone in a dilution of 1:1,000,000; the amount of this dilution was increased with each treatment, and no untoward symptoms resulted. The dilution of the peptone was then increased to 1:100,000, and no symptoms followed 0.1 c.c. of this dilution. A week later the same dose was repeated, and in a few hours the patient developed large, white, very itchy urticarial wheals over his whole back; these persisted for only a few hours. A week later the same dose was again repeated but without symptoms, and since then the amount of the dilution has been gradually increased without producing symptoms, and the patient has been free from asthma.

Case 6.—M. S., a girl, aged 13, had bronchial asthma since she was 1 year old. During the first year of age she had eczema, but this disappeared when asthma began. The patient had urticaria after drinking milk.

Cutaneous tests were positive with the proteins of rice, milk and mackerel, and with all three proteins of horse dandruff in dilutions of 1:100, and with the coagulated protein in a dilution of 1:1,000.

The patient was given subcutaneously 0.1 c.c. of the coagulated protein in a dilution of 1:10,000. The next morning there were present all over her body raised, itching blotches which the patient's mother called hives. A week later the same dose was repeated without producing symptoms, and further increase in the dose produced no symptoms.

Case 7.—W. P., a man, aged 44, had asthma for fifteen years and hay-fever for ten, both chiefly in the summer months, from the middle of August to the first of October. He had winter bronchitis.

Cutaneous tests were positive with the pollen of ragweed in a dilution of 1:5,000, and of goldenrod in a dilution of 1:100; higher dilutions of these pollens failed to give reactions.

The patient was thus treated subcutaneously at weekly intervals with ragweed pollen: 1:10,000 dilution, 0.1 c.c.; 1:5,000 dilution, 0.1, 0.2 and 0.3 c.c.; 1:1,000 dilution, 0.1 and 0.2 c.c., and 1:500 dilution, 0.1 and 0.2 c.c. A few minutes after the last injection, large, raised, white, very itchy wheals appeared over the patient's whole body; they disappeared in a few hours. Subsequent weekly injections of 0.2 and 0.4 c.c. of ragweed pollen in a dilution of 1:500 caused no untoward symptoms.

Case 8.—J. M., a boy, aged 12, had asthma since he was 1 year of age. He had eczema from infancy up to a few years ago, when it disappeared and has not since returned.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:500 and with the proteins of horse dandruff in dilutions of 1:100; higher dilutions of the pollen and of the dandruff proteins were negative.

A subcutaneous injection of 0.1 c.c. of a 1:1,000 dilution of ragweed pollen was followed the next morning by urticarial wheals over the whole body. Three days later, 0.1 c.c. of a 1:500 dilution of the pollen was followed the next morning by a much less extensive urticaria. Subsequent injections at three day intervals of 0.2 c.c. of a 1:500 dilution of the pollen and 0.1 and 0.2 c.c. of a 1:100 dilution of the pollen caused no untoward symptoms. A series of injections with the proteins of horse dandruff also failed to produce urticaria.

Case 9.—B. S., a housewife, aged 46, had the summer type of hay-fever and asthma for nine years.

Cutaneous tests were positive with the early and with the late pollens. Timothy pollen was positive in a dilution of 1:100 and doubtful in a dilution of 1:500, red top pollen was doubtful in dilution of 1:100, and ragweed pollen was positive in a dilution of 1:100 but only slightly positive in a dilution of 1:500.

The patient was given a series of subcutaneous injections at weekly intervals with timothy pollen in dilutions of 1:500

and 1:100 without symptoms. The patient was then similarly treated with ragweed pollen in 1:1,000 dilution, 0.1, 0.2 and 0.3 c.c., and in 1:500 dilution, 0.1 c.c., without producing untoward symptoms. A week later, 0.2 c.c. of 1:500 dilution was followed in a few hours by an attack of asthma and by urticaria which continued for only a few hours. Treatment, however, was continued as previously with 0.3 and 0.4 c.c. of a 1:500 dilution and with 0.1 c.c. of a 1:100 dilution without producing symptoms.

In the foregoing protocol the first two patients, Cases 5 and 6, both developed urticaria following subcutaneous injections of horse dandruff proteins. It is difficult to explain why in Case 5 the second dose of 0.1 c.c. of protein caused urticaria when only a week previous the same dose had failed to do so. The theories of antianaphylaxis would not seem to obtain in such a case. Rackemann[6] has recently reported an instance in which such theories failed. The other three patients, Cases 7, 8 and 9, developed urticaria following injections of ragweed pollen. In Cases 7 and 9, the theories of antianaphylaxis fail. Although such experiences are neither usual nor serious, nevertheless great care should be employed in attempting to desensitize patients in order to avoid more serious results. It is interesting that in Case 9 timothy pollen should fail to produce urticaria, whereas ragweed pollen did cause urticaria, since the patient by skin reaction was equally sensitive to the two pollens.

PROTOCOLS OF PATIENTS WITH ANGIONEUROTIC EDEMA

CASE 10.—A physician, aged 28, had the summer type of hay-fever for seven years, and during the past winter he had slight asthmatic attacks with colds. The patient's mother had hay-fever, and his two children had urticaria after eating strawberries and lobster.

Cutaneous tests were positive with all of the common pollens and with alcoholic extracts of horse dandruff and guinea-pig hair. Timothy pollen gave a positive test in a dilution of 1:1,000 but no higher.

The patient had no ill effects following two subcutaneous injections of timothy pollen in a dilution of 1:5,000. A week later by mistake he injected 0.1 c.c. of a dilution of 1:500 instead of 1:1,000, as should have been done. Following this injection the patient had the following symptoms, which will be given in detail since he observed himself closely: Ten minutes after the injection, the patient's eyelids itched severely. This was quickly followed by suffusion of the face and neck; the latter rapidly became much swollen, necessitating the rapid removal of the patient's collar. The nares and nasopharynx became greatly swollen, thus making respiration through them difficult. His face became turgid and swollen, and the swelling of his face was so marked that it was on a level with his nose. The swelling of the eyelids closed his eyes. The suffusion extended rapidly over his chest and body, with intense itching, and shortly urticarial wheals developed. The wrists and hands soon became involved, but the arms and legs remained free from wheals. All of the foregoing symptoms, with the exception of the edema, disappeared in three hours. A few hours later, the patient had intense cramplike pains in the abdomen, and extreme tenesmus which was not relieved by going to stool. During this train of symptoms the patient's pulse rate was 120 per minute, his temperature was normal, and his respiration was rapid and labored; his blood pressure was not taken. He had considerable headache throughout the night, and he was restless and irritable. The next morning his face and eyelids were still badly swollen, and he felt somewhat prostrated, although he was not prevented from working.

CASE 11.—A nurse, aged 28, had bronchitis and asthma from childhood. Recently while making a flaxseed poultice the patient had an attack of coughing, sneezing, watering of the eyes, and asthma.

Cutaneous tests were positive with the protein of flaxseed.

The patient was given subcutaneously 0.1 c.c. of a 1:10,000 dilution of flaxseed protein. Five minutes later the patient began to cough and choke, and five minutes later still she was unable to walk because of extreme dyspnea. Her head became very hot, her neck began to swell so that she had quickly to remove her collar, her face became so swollen that both eyes were closed, and she began to itch terribly. Her head itched severely, her ears felt like bursting, her heart felt queer, she was sick at the stomach, respiration was difficult, and on the whole she felt impending death. She was very cyanotic, and urticarial wheals developed over the upper part of her body. The urticaria soon disappeared from the upper part of the body only to appear over the lower part of the body; but in an hour she was free from urticaria. During the height of the disturbance a subcutaneous injection of epinephrin (adrenalin chlorid, 1:1,000, Parke, Davis & Co.) relieved the head and earache and the dyspnea. The patient was unable to sleep because of severe gas pains in the abdomen. The next morning she felt normal.

CASE 12.—F. V., a woman, aged 44, had asthma for seventeen years only in the summer time from the middle of August to the first of October. In childhood she had hay-fever and eczema.

Cutaneous tests were positive with ragweed pollen in a dilution of 1:500, and a dilution of 1:1,000 gave a doubtful reaction.

The patient was given a subcutaneous injection of ragweed pollen in a dilution of 1:1,000; 0.1 c.c. was given. A few minutes later she had an attack of sneezing, wheezing, ringing of the ears, running of the eyes and nose, and her face suddenly became swollen and her collar had to be quickly removed. A few hours later she was normal.

In the foregoing protocols, Patients 10 and 11 had typical angioneurotic edema, which, according to Osler, includes urticaria and intestinal cramps. In Case 10, angioneurotic edema followed too large a subcutaneous dose of timothy pollen, and in Case 11 it followed a very small dose of flaxseed protein; in fact, the amount of flaxseed protein was probably much less than that which may be readily absorbed from its application as a poultice. It is probable that the patient became sensitized to flaxseed protein through the frequent application of such poultices, since as a child she remembers such medication for her bronchitis. Patient 12 had marked swelling of the face, neck and throat following a small injection of ragweed pollen, but the reaction was much less marked than in the two preceding cases. Such experiences well illustrate the great care that should be employed in the desensitization of persons with proteins to which they are sensitive.

CONCLUSIONS

The proteins of horse dandruff, ragweed and timothy pollens may cause eczema both from external exposure and internal injection in predisposed persons. As we have found it to be with food proteins, so it is with the foregoing proteins: Eczematous patients tolerate very small doses of the offending protein and the eczema seems to improve; but a slight increase above this small amount makes the eczema worse. The amount of protein that benefits eczema is too small to prevent asthma, and the amount of protein that benefits asthma makes the associated eczema worse. Therefore, desensitization for eczema, if such is possible, must be a very slow and cautious process, even more than for asthma.

Since small subcutaneous injections of the proteins of horse dandruff and ragweed pollen caused urticaria

6. Rackemann, F. M.: Interesting Reactions Incidental to the Treatment of Two Cases of Bronchial Asthma, THE JOURNAL A. M. A., Sept. 15, 1915, p. 889.

in some cases, it would seem advisable, when determining the cause of urticaria, to exclude all protein substances with which the patient may come in contact, as well as the food proteins. The same reasoning would seem to apply to cases of angioneurotic edema.

During the desensitization of patients with proteins, the appearance of eczema, urticaria or angioneurotic edema should make one suspect that the treatment was the cause of such symptoms. Although such experiences are not serious, yet they are sufficiently alarming to warrant great care in the desensitization of patients with proteins.

THE DIET OF THE NEGRO MOTHER IN NEW YORK CITY*

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Not long ago we reported the result of prophylactic therapy for rickets in a negro community.[1] This test was carried out in what is known as the Columbus Hill district of New York City, a district with a population of about 9,000, composed almost entirely of negroes. As was stated in the previous paper, this section enjoys the unenviable distinction of having the highest infant mortality rate of any community in the city, although, it should be added, the rate is steadily decreasing. Shortly before we undertook this study, a survey of Columbus Hill had been carried out by the Henry Street Settlement and the National League for the Study of the Urban Conditions of the Negro, to ascertain the social and economic conditions responsible for the high death rate. Both these organizations have been helpful in enabling us to gain access to the homes of these people, and we take this opportunity of thanking them for their cooperation.

In connection with the examination of the infants for rickets, which was made in the homes, and involved frequent interviews with the mothers, it seemed worth while to conduct a careful investigation as to the dietary of these women. This work promised to be of value, not only from an economic, but also from a medical standpoint, as it has at all times seemed probable that the food of the infant, and perhaps that of the mother as well, played a rôle in the development of rickets. We therefore set ourselves the task of ascertaining the adequacy of the diet of a group of women — about seventy-five in all — with respect to its caloric value, its content of the various foodstuffs, and its mode of preparation. This investigation was made in the fall of 1916 and the winter of 1917, before the war had caused prices to rise inordinately, so that the results cannot be regarded as having been distorted by the high cost of living.

The method of procedure and the results obtained are portrayed in the series of tables included in this paper. Table 1 shows a typical dietary chart, such as was used to record the data obtained in each case. In ascertaining the amount of food used daily—for example, a teaspoonful of sugar—we always asked the woman to demonstrate what she understood by a teaspoonful. In the case of bread, she was asked to cut a slice. Her cupfuls were likewise seen and measured. We realize that this cannot be considered an absolutely accurate method of measurement. From a practical dietetic standpoint, however, it gives important information, and when it is carried out among a considerable number of persons, the error is not great. In five instances, exact figures were obtained. The food was weighed as well as measured. For this purpose a considerable number of the more intelligent women were selected, such as gave promise of being able to cooperate. Each of these women was given a scale, and was asked to weigh all the food she used for two twenty-four hour periods. Among the women, there were only five who we were convinced carried out the experiment satisfactorily. The others did not evince sufficient interest or understanding for us to accept their figures. The five weighed dietaries are reproduced in Table 2. On examination, these figures show that the women consumed almost 2,500 calories a day, that is to say, almost the estimated requirement for a woman weighing 60 kg. (132½ pounds); that they received a sufficient amount of protein, and that their carbohydrate intake was almost normal, but that they obtained about three quarters of the amount of fat which should be normally consumed.

TABLE 2.—COMPOSITION AND CALORIC VALUE OF FIVE DIETARIES IN WHICH FOOD WAS WEIGHED

Case No.	Weight, Kg.	Amount Eaten				Estimated Requirement			
		Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
14	72	128	71	286	2,342	124	124	367	3,212
17	51	75	79	305	2,304	87	87	270	2,344
46	56	78	84	341	2,139	95	95	297	2,464
55	63	177	109	249	2,786	107	107	334	2,772
68	69	102	60	421	2,735	117	117	366	3,038
Aver.	62	104	75	300	2,457	105	105	329	2,729

TABLE 3.—COMPOSITION AND CALORIC VALUE OF FIFTEEN DIETARIES IN WHICH FOOD WAS MEASURED*

Case No.	Weight, Kg.	Amount Eaten				Estimated Requirement			
		Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
4	51	121	74	336	2,524	87	87	270	2,344
9	51	94	54	224	2,050	87	87	270	2,344
18	49	135	77	252	2,175	83	83	260	2,156
19	61	126	43	387	2,179	104	104	323	2,804
25	81	109	92	214	2,087	138	138	429	3,564
30	51	151	102	194	2,227	87	87	270	2,344
36	65	132	83	401	2,963	111	111	345	2,990
38	49	127	70	266	2,062	83	83	260	2,156
43	47	119	88	213	2,005	80	80	249	2,068
44	65	156	95	386	2,941	111	111	345	2,860
51	79	111	67	377	2,487	134	134	419	3,476
56	61	127	76	308	2,439	104	104	323	2,684
57	79	144	98	358	2,116	134	134	419	3,476
63	47	172	85	220	2,323	80	80	249	2,068
67	65	84	58	277	1,895	111	111	345	2,860
Aver.	60	129	77	302	2,458	102	102	318	2,640

* The food charted in Table 2 was weighed immediately before eating. The food in this table was measured before eating, and subsequently equal amounts were weighed.

Table 3 gives the composition and caloric value of fifteen dietaries in which the food was merely measured, and coincides surprisingly well with the figures given in the previous table. Here we see an excess in the intake of protein, an adequate consumption of carbohydrates, and once more a deficiency of almost 25 per cent. of fat in the dietary.

The deviation of these twenty dietaries from normal standards forms the basis of Table 4, which constitutes a summary of the twenty cases. It merely brings into

* On account of lack of space, some of the tables have been omitted. They will appear in the reprints, a copy of which may be obtained from the authors on request.

1. Hess, A. F., and Unger, L. J.: Prophylactic Therapy for Rickets in a Negro Community, THE JOURNAL A. M. A., Nov. 10, 1917, p. 1583.

relief the points just emphasized, showing the number of cases in which the three main foodstuffs were excessive, normal, or deficient in amount.

In order to get information as to the actual foodstuffs which the women ate, we ascertained the dietaries of almost all those whose babies were receiving the cod liver oil therapy. The women numbered about seventy-five in all. We carried on the study of dietaries from day to day, noting the kind of food they had consumed during each previous twenty-four hours. There were some who were too ignorant to furnish reliable information, in which cases the data were discarded. In every instance, we obtained the dietary for at least two or three days, being careful not to include Sunday or Monday in the number. In this way we collected the dietaries (reproduced in Table 5) of seventy-five mothers for 179 days. A glance at this table shows that the women ate meat or fish almost daily; that rice or potato also constituted a daily part of their ration; that milk, except in small amounts as it was taken with tea or coffee or cereal, entered scantily into their dietary; that fruit was taken only fifty-three times in the 179 days, and that this was true of vegetables to about the same extent.

In the study of vegetables as an article of diet, it is important to distinguish between the fresh and the canned or dried. Although there is no doubt that

TABLE 5.—NUMBER OF TIMES IMPORTANT FOODSTUFFS WERE EATEN BY SEVENTY-FIVE WOMEN (179 DAYS' DIETARIES)

Foodstuff	Number of Days Food Was Eaten at Least Once	Foodstuff	Number of Days Food Was Eaten at Least Once
Meat or fish	172	Potato	128
Eggs	52	Rice	100
Milk: As a beverage	47	Fruit	53
Milk: With cereal	59	Vegetable: As vegetable	53*
Milk: With tea or coffee	51	Vegetable: In stew	22
Milk: With cocoa	36		

* Fresh vegetables were eaten 21 times; canned or dried, 32 times.

the latter forms of vegetables have considerable nutritional value, they must not be regarded as the equivalent of fresh food.[2] Looking into the question from this point of view, we found, at least in the fall and winter months when our investigations were made, that the women rarely had the fresh food in mind when they referred to vegetables. There was a preponderance of canned and dried vegetables, as well as a deficiency of fresh vegetables in the 179 days' dietaries. We find that, on an average, vegetables were eaten about twice a week (fifty-three times in the 179 days) and that fresh vegetables were taken in twenty-one instances, constituting an average of less than once a week. Inquiries at the grocery and vegetable stores in the neighborhood served to confirm these observations. The amount of fresh vegetables in stock was small, and the storekeepers stated that almost all they sold were either dried or canned. Nor was this lack of fresh food compensated for by a liberal intake of fruit. In fact, we find the same deficiency in this important article of diet. The women ate fruit only about twice a week (fifty-three times during the 179 days), and if we refer to the table of individual families (Table 6), it is evident that in many instances fruit hardly need be considered as forming an article of their dietary.

2. The fact that fresh vegetables will prevent the development of scurvy in man and animals, whereas dried vegetables fail to do so, shows that a distinction must be recognized between them.

It seemed of interest to inquire whether these people prepared their meals in any special manner, and especially how long they cooked the vegetables and the meat, as well as whether they used soda to hasten the cooking process. The main point brought out by this aspect of the investigation was that they undoubtedly cooked their food longer than the average housewife.

TABLE 6.—DURATION AND MANNER OF COOKING MEATS AND VEGETABLES

Case No.	Vegetable: Boiled (Hours)	Vegetable: Water Discarded	Meat: Boiled (Hours)	Meat: Stewed (Hours)	Soda Used: For Meat or Vegetable	Soda Used: Amount†	Soda Used: Times a Week
1	1	Yes	1	2	0	0	0
2	1	No	2	2½	Veg.	+	7
3	1	Yes	2	3	0	0	0
4	1¾	No	3	3	0	0	0
5	2	Yes	2½	2½	0	0	0
6	1	Yes	2½	2	0	0	0
7	1	Yes	2	1½	Veg. & meat	½ teasp.	½
8	½	Yes	1	2	0	0	0
11	1½	Yes	1	3	0	0	0
12	2½	No	3	6½	Veg. & meat	+	2
13	1	Yes	*	2	0	0	0
14	1	No	1	2	0	0	0
15	2	Yes	3½	2½	Meat	½ teasp.	2
16	4	No	3	3	Meat	+	1
17	1	Yes	3	3	0	0	0
18	1	Yes	3	2	0	0	0
19	2½	No	2	2	0	0	0
20	2	No	2	2	0	0	0
21	1	Yes	3	3	0	0	0
22	1	Yes	2	3	0	0	0
23	1	Yes	2	3	Meat	+	2
24	2	No	*	2	0	0	0
25	1½	No	2½	3	Meat	+	½
27	2	Yes	2	2	Meat	+	0
28	1½	Yes	3	2	Veg. & meat	+	½
29	1	Yes	2	3	0	0	0
30	2½	Yes	2	5	Meat	½ teasp.	½
31	1	Yes	2	2	Veg.	+	0
32	2½	Yes	4	4	0	0	0
33	1	Yes	2	2	0	0	0
34	2	Yes	3	3	0	0	0
35	2	No	1½	2½	Veg. & meat	+	4
37	1	Yes	1½	3	0	0	0
38	2½	Yes	5	3	Veg. & meat	½ teasp.	2
40	2	Yes	3	4	0	0	0
41	2	No	2½	3	0	0	0
42	1	Yes	1½	1½	0	0	0
43	3	No	3	4	0	0	0
44	1¼	Yes	2½	3	0	0	0
45	2	Yes	2	2	0	0	0
46	5	No	7	4	Meat	+	¼
47	1½	No	1½	2	0	0	0
48	1	Yes	1½	4½	Meat	0	0
49	½	Yes	1	1½	0	0	0
50	2½	No	2½	2	0	0	0
51	2	Yes	3	4	0	0	0
52	2	Yes	2½	3	Meat	+	1
53	2	Yes	2	4½	Veg. & meat	+	1
54	½	No	2	3	0	0	0
55	2	Yes	4	4	0	0	0
56	1	Yes	1½	2½	0	0	0
57	1	Yes	2	4	0	0	0
58	1	Yes	1½	3	0	0	0
60	1	Yes	2	3	0	0	0
62	2	Yes	1½	3	0	0	0
63	1	Yes	2	3	0	0	0
64	1	Yes	3	3	Veg. & meat	+	3
65	1½	No	2½	2½	Veg. & meat	+	2
66	2	Yes	1	2	Meat	+	½
67	1½	No	1½	4	0	0	0
68	1½	No	3	5	0	0	0
70	1½	Yes	2	3	0	0	0

* Never uses boiled meat.
† In this column, + indicates a pinch of soda.

We found this to be especially true of meat, which was eaten very frequently in the form of a stew. The vegetables were cooked one or two hours, and the water in which they were cooked was generally discarded. In some cases a small amount of soda was added to soften the vegetables; this practice, however, was the exception. The data of these culinary customs have been summarized in Tables 8 and 9, and comprise the facts elicited from seventy families.

The negroes of the Columbus Hill district, in the great majority of instances, have emigrated from the West Indies, only a few having come from the southern part of the United States. Most of them have been here a few years, giving the islands of St. Kitts, the Barbadoes and St. Croix as their places of birth. It appeared worth while to inquire into their habits and diet before they emigrated to this country, and to compare these with their mode of life in a great metropolitan city under different climatic conditions. No more striking contrast could have been found. In the West Indies they lived an outdoor life, their diet consisting mainly of vegetables and fruit. They stated that they frequently ate two or three kinds of vegetables at a meal, and partook of them always fresh—never in a dried or canned state. The variety of vegetables was also considerably greater than we have in New York City. In addition to peas and beans, spinach, etc., they mentioned yams, breadfruit, "tanniers," eddoes, watercress and okra as forming frequent articles of food. Many of these vegetables grew in their own gardens, or were brought to the town from the suburbs and sold at what seem to us nominal prices. Just as the dietary was rich in vegetable food, so was it also in fruit, which they consumed once a day or oftener.

It is probable that a dietary as deficient as that of this urban community must affect the body tissues. The question may well be raised whether this would not be true to a greater extent among a people accustomed to have fresh food in abundance. It is difficult to state in chemical terms the exact deficiency in this diet. For calcium and other salts, however, we depend largely on milk, vegetables and fruit, and it is in all these foods that the dietary we have outlined is markedly lacking. It would seem certain that these women, and probably others who are living in the large cities of the North, are receiving an amount of calcium which is close to their minimum requirement.

There is a hypothetic aspect which suggests itself in relation to this subject. As is well known, the negro race is particularly subject to rickets. In fact, almost all the negro children in New York City, whether nursed or artificially fed, seem to have this disorder to a greater or less extent. The nature of rickets and the cause of this racial susceptibility remain illusive and unsolved problems. It is known, however, that the negro in the tropics does not suffer from rickets.[2] We have made direct inquiries of physicians in Jamaica, Cuba, Panama, Trinidad and the Bahamas, and received unanimous reports that this disease has been rarely encountered in their experience.[3] There are many etiologic factors to which the difference in the incidence of rickets in the tropics and in the North may be ascribed. It is a mooted question, one which has occupied pediatric attention for many years, but which cannot well be discussed at this time. We must take into account the contrast in the northern negro's mode of life, as well as the change in the climate. This, however, does not exclude the possibility that the marked difference in the food also plays a part. The fact that this race has lived on a diet largely composed of fruit and vegetables—foods rich in calcium and in undefined substances present in all fresh vegetable products—and the fact that its dietary has suddenly been changed so that meat becomes one of the principal ingredients, to the virtual exclusion of fresh fruits and vegetables, may well alter the metabolism of the mother and her offspring.

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3. Dr. J. E. Ker, Kingston, Jamaica, British West Indies, superintending medical officer, wrote: "Rickets, as we know it in infants in large towns, practically does not exist here in Jamaica. Beaded ribs and square heads are of the very rarest occurrence."

Dr. Guiteras, Havana, put our question to Dr. Aballi, a specialist in the diseases of children, who said: "My experience is that colored children in Cuba suffer but little from rickets. Only exceptionally do we meet with a grave form, and the lighter ones are not frequent, with slight epiphyseal enlargements and beading of ribs."

Dr. Guiteras himself wrote as follows: "My impression is the same as Dr. Aballi's. It is interesting to note that in the absence of natural alimentation, much boiled milk is always used."

Dr. W. B. Pierce, Panama, superintendent of the Hospital Santo Tomas, as a result of his experience, having been in the Health Department of the United States government on the Canal Zone and the City of Panama for the past eight years, wrote: "I have yet to see my first case of rickets in the West Indian negro child. My colleagues who have been here much longer tell me that West Indian children down here never have rickets."

Dr. R. Scheult, Colonial Hospital, Trinidad, Port of Spain, expressed the following opinion: "You will be surprised to learn that during my twenty-four years of hospital practice in this colony I have not met a single case of rickets, although hundreds of children are treated in our children's ward every year. This, no doubt, may be attributed to their diet, which consists mainly of vegetables and fruit."

Dr. J. B. Albury, Nassau, Bahamas, wrote: "I do not consider rickets at all a common disease here among negroes."

AN EXPERIMENTAL INVESTIGATION OF LIPOVACCINES

AN ADDITIONAL NOTE, WITH A NOTE ON TRIPLE DYSENTERY LIPOVACCINE *

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At the Washington meeting of the Society of American Bacteriologists, in December, 1917, we presented a preliminary note on lipovaccines. In THE JOURNAL, Feb. 16, 1918, we gave the results of vaccination of animals and men with a triple typhoid, a triple dysentery, a pneumococcus, and a meningococcus lipovaccine, and we gave our reasons for thinking the oil suspension would be an advantage in each case.[1] In both of those notes we indicated some of the difficulties that would have to be overcome in order to produce the vaccines on a large scale. We now feel that we have overcome some of these difficulties.

As all of our first series of animals and men are now broken up, and much more comprehensive series are under way on all of the vaccines, we desire to record the final results of our preliminary series of vaccinations, especially with the triple dysentery lipovaccine.

PREPARATION OF THE LIPOVACCINES

Preparation of the Bacterial Mass.—One of the principal points is to get the bacteria from the culture medium into the oil as promptly as possible, and with as little change as possible. It appears that freezing and drying in vacuo accomplish this better than does drying in warm air.

Rogers[2] has shown that when bacteria in milk are frozen and dried in vacuo over sulphuric acid, there is no change in the concentration of substances in the liquid in which the organisms are bathed, and that in lactic bacteria dried that way, from 90 to 95 per cent. of the organisms are alive after drying. He also showed that the number of living organisms was

* From the Department of Pathology, Army Medical School.

1. Whitmore, E. R.; Fennel, E. A., and Petersen, W. F.: An Experimental Investigation of Lipovaccines, THE JOURNAL A. M. A., Feb. 16, 1918, p. 427.

2. Rogers, L. A.: The Preparation of Dried Cultures, Jour. Infect. Dis., 1914, 14, 100.

greatly reduced when they were dried by a current of warm air.

In the preparation of the lipovaccines, the bacteria are grown on agar in Kolle flasks, and are removed with a vacuum scraper. This scraper consists of a T shaped or Shepherd's crook shaped piece of metal tubing with a narrow slit or multiple holes in that portion which comes in contact with the agar. This scraper is attached to a vacuum pump through a collecting flask; and when passed over the surface of the agar it removes the bacterial growth very thoroughly. In this way large amounts of bacterial material can be collected from the Kolle flasks without the addition of any fluid, and with a minimum of danger of contamination.

The bacterial growth is at once poured into Petri dishes, frozen, and dried in vacuo. If, for any reason, there is any delay in drying, the bacterial material is kept frozen and at constant temperature, and, being in Petri dishes, the material can be put directly into the desiccators without being allowed to thaw.

We have dried our material in glass desiccators and in the metal desiccator devised by Rogers. Metal desiccators for direct circulation of brine from the refrigerating plant are now being installed, and this will make it possible to freeze and dry the bacteria in large amounts.

When the bacterial mass is frozen and dried in vacuo, it makes a flaky mass that readily crumbles to a fine powder. This dried bacterial material is at once incorporated in the oils.

Preparation of the Lanolin and Oil.—We have used lanolin, lecithin and sperm oil for emulsifying the bacteria in the oil before the final dilution with oil.

Any vegetable oil appears to be satisfactory as a vehicle: the oil must not be irritating when injected, and it must not be too rapidly absorbed, but it must be completely absorbed. Olive oil is being used at the present time; though we have used sweet almond oil, castor oil, cottonseed oil, and sesame oil.

Sterilization of the lanolin and oils has received attention. Achard and Foix[3] found that when olive oil was heated high enough to sterilize it in dry air, the oil was changed so that it at times gave abscesses on injection.

We find that these oils, when seeded with *B. subtilis* spores, can be sterilized in the autoclave at 15 pounds for fifteen minutes; and any water they take up will soon settle out. We also find that heating the oil to 90 C. on a water bath for ten hours, as is done by Eimer and Amend, will sterilize.

We have tried sterilization with the halogens. Chlorin sterilizes the oil, but it is difficult to remove the hydrochloric acid which is formed in the process, as the vegetable oils form soaps when an alkali is added. These chlorinated oils also tend to decompose on standing, with the formation of hydrochloric acid.

We find that when powdered potassium iodin is added to olive oil and sweet almond oil, iodin is liberated in sufficient amount to sterilize the oil; and then the iodin is taken up in the oil molecule and no free iodin can be detected. Sweet almond oil is sterilized in about three days; but it requires about ten days to sterilize olive oil. It is necessary to know whether this method of sterilization will affect the antigenic power of the vaccine. Dr. Small is working on this problem.

We are also trying ultraviolet rays in the sterilization of the oil.

For the present we are sterilizing the lanolin and oils in the autoclave at 15 pounds for fifteen minutes, and find this entirely satisfactory.

Mixing the Bacterial Mass with the Lanolin and Oil.—For grinding we are using glass stoppered bottles of large diameter, with steel balls such as are used in ball bearings. We do not find that the glass is ground off to any extent; and when we are able to get bottles of large diameter made of pyrex glass, we believe this will be far superior to porcelain jars with pebbles for this work.

The bacterial mass is ground for forty-eight hours; then enough lanolin to make 10 per cent. in the completed vaccine is added, and the mixture is ground for twenty-four hours; then the oil is added, and this mixture is ground for twenty-four hours.

In using lecithin in the preparation of the emulsion, enough lecithin to make 0.5 per cent. in the completed vaccine is thoroughly mixed with a little oil and is then ground with the bacterial material as is the lanolin. Lecithin has the disadvantage of making a foamy emulsion; this settles on standing, but it takes up air bubbles on very slight shaking.

Sperm oil has been tried in making the emulsion, on account of its being of the nature of a liquid wax.

We find that the preliminary grinding kills the bacteria; and tests are now being made to determine whether this grinding to a fine powder makes the bacterial material more rapidly absorbed. Possibly this preliminary grinding should be limited to merely breaking up the bacterial mass so it will mix with the lanolin.

We heat the final oil suspension to 53 C. for one hour on a water bath. Pfeiffer and Besseau[4] found that heating a saline suspended vaccine extracted the antigenic substances from the bacteria very rapidly and very thoroughly. Tests are now under way to determine whether this is the case in an oil suspended vaccine, and whether the heating is of any advantage.

ADMINISTRATION OF THE VACCINE

In our previous note we gave the method of administering the vaccine. We find a needle, No. 21, B. and S. gage, with a cannula three-fourths inch long entirely satisfactory.

In giving the lipovaccine, the possibility of fat embolism from accidentally getting some of the vaccine into a vein has been considered. Le Moignic and Pinoy[5] noted tachycardia in the mice in their early series; but they considered this to be due to the 1 per cent. of camphor they used in the vaccine. They did not notice any reaction of this kind in later injections with vaccines which contained no camphor.

Graham[6] says that fat embolism may be a frequent and often serious complication of such conditions as fractures, but that it seldom causes death. In experimental work, Graham found that a single dose of 0.8 c.c. of oil injected into the ear vein of rabbits gave only a slight passing dyspnea, or no evidence of discomfort.

Thus, it appears that the danger of fat embolism in giving the lipovaccines is slight; and this agrees with

3. Achard and Foix: Compt. rend. Soc. de Biol., 1916, **79**, 209.

4. Pfeiffer, R., and Besseau, G.: Ueber die angebliche Trennung der toxischen und der immunisierenden Bestandteile des Typhusbacillus, Centralbl. f. Bakteriol., Part I, Orig., 1912, **64**, 172.

5. Le Moignic and Pinoy: Compt. rend. Soc. de biol., 1916, **79**, 201.

6. Graham, G. S.: Fat Embolism: Report of a Case and of Experiments on Animals, Jour. Med. Research, 1907, **16**, 459.

experience in the injection of mercurial oil (gray oil) and other oil preparations. However, our warning is very definite to make the injection subcutaneously, and carefully to avoid getting the vaccine into a vein. After the needle has been introduced, the plunger of the syringe should be drawn out slightly, to be certain that the needle is not in a vein.

THE DYSENTERY LIPOVACCINE

In our previous publications we have indicated as our reason for considering that a dysentery lipovaccine would have a special advantage over a dysentery saline vaccine, that the slow absorption would reduce the reaction; and we gave some results of vaccination of animals and men with such a vaccine. As the series is now broken up, and a much more comprehensive series is under way, we wish to record the final results of the first series.

The vaccine contained 2,500 million each of Shiga, Flexner and "Y" types in 1 c.c., the strains that Gibson[7] used in his vaccine being employed.

Three rabbits were injected with the vaccine, and showed the agglutinations given in Table 1.

TABLE 1.—AGGLUTINATIONS IN THE RABBIT

		Agglutination		
Rabbit	Dose	Shiga	Flexner	"Y"
16*	1 c.c.	1:100	1:800	1:400
17	1 c.c.	1:3,200	1:1,600	1:2,400
18	2 c.c.	1:100	1:400	1:1,600

*Rabbit 16 died two months after vaccination.

Two men were injected with the vaccine, and showed the agglutinations given in Table 2.

TABLE 2.—AGGLUTINATIONS IN MAN

		Agglutination*		
	Dose	Shiga	Flexner	"Y"
R.†	0.25 c.c.	1:200	1:200	1:37
St. J.	1 c.c.		None	

* The agglutinations of these men are reversed in the preliminary note.
† R passed from further observation.

Two and one-half months after vaccination, St. J.'s serum in dilution of 1:20 gave immediate cloudiness, and precipitation after two hours, with an extract of the Shiga type. His serum gave only a slight opalescence with extracts of the Flexner and "Y" types. Control serums remained clear.

Two and one-half months after vaccination, the serum of St. J. and of Rabbits 17 and 18 showed an opsonic index of from 0.26 to 0.82 for Shiga and Flexner, and an opsonic index of from 1.35 to 1.81 for "Y." In studying the smears made for the opsonic index, it was noted that there was marked bacteriolysis in all smears containing serum from the vaccinated animals and man. This may explain the low opsonic indexes; and this point is being studied in the new series.

Two and one-half months after vaccination, the serum of Rabbit 17 gave partial fixation of complement with all three types of the dysentery bacillus; the serum of Rabbit 18 and of St. J. showed no fixation of complement.

Two and one-half months after vaccination, Rabbit 18 received a dose of 2,700 million *B. dysenteriae* Shiga L intraperitoneally. The rabbit died during the night, apparently in about the same length of time as did the controls. The toxicity of this culture is such that 1,000 million intraperitoneally kill a rabbit in thirty-six hours.

7. Gibson, H. G.: A New Method of Preparation of a Vaccine against Bacillary Dysentery, Jour. Royal Army Med. Corps, 1917, 28, 615.

For the new series of animals and men we have used a vaccine containing 3,000 million Shiga, 3,200 million "Y," and 2,200 million Flexner per cubic centimeter, using the strains that Gibson[7] used in his vaccine. Guinea-pigs stand up to 6 c.c. of this vaccine without ill effects; and we have vaccinated a series of men with 1 c.c. of this vaccine with no more local or general reaction than we get from a single dose of the regular triple typhoid vaccine in saline.

CONCLUSIONS

We find that the lipovaccines can be made on a large scale by growing the bacteria in Kolle flasks; taking off the growth with a vacuum scraper; freezing and drying in vacuo, and emulsifying in lanolin and oil by grinding in a ball mill, using glass bottles and steel balls.

The oils can be sterilized by steam at 15 pounds for fifteen minutes; by heating to 90 C. for ten hours on a water bath, or by mixing with potassium iodid.

We find that we can give men a dose of 3,000 million Shiga, 3,200 million "Y," and 2,200 million Flexner type of the dysentery bacillus in oil without marked local or general reaction. We find production of agglutinins, precipitins and bacteriolysins in the blood of vaccinated animals and men, and there is some evidence of complement fixation.

THE INFLUENCE OF FORCED DIURESIS IN EXPERIMENTAL POISONING WITH DIPHTHERIA TOXIN *

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This records an effort to apply the principle of forced diuresis or histolavage to the treatment of experimental poisoning with diphtheria toxin. As certain of the bacterial poisons are known to be capable of excretion in considerable amounts by way of the urine, a great acceleration of diuresis might appear to be a more rational procedure in the case of certain infections than in the case of poisoning with heavy metals. Diphtheria toxin was selected because it is sufficiently stable to permit of standardization. The work is reported for the sake of completeness along with that on glaucoma, mercuric chlorid poisoning, etc., since it serves to amplify our knowledge of what may or may not be accomplished by salt and sugar diuresis in general.[1]

TECHNIC

The same general plan was followed as in the mercuric chlorid work.[2] The diphtheria toxin was a stable product 2 years old. The fatal dose was determined intravenously, but not with the same degree of precision as in the case of the mercuric chlorid, owing to the varying resistances found in the different animals. We found that 0.021 c.c. of the toxin per kilogram of body weight killed four out of five dogs in from three and one half to six days. One part of the toxin in 100 parts of 0.8 per cent. sodium chlorid solution was

* From the Otho S. A. Sprague Memorial Institute, Laboratory of Clinical Research, Rush Medical College.

1. A fifth detailed report covering phases of work outlined in a preliminary communication (Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, THE JOURNAL A. M. A., Dec. 11, 1915, p. 2067).

2. Sansum, W. D.: The Principles of Treatment in Mercuric Chlorid Poisoning, THE JOURNAL A. M. A., March 23, 1918, p. 824.

administered intravenously in each case as a single dose. When diuretic treatment was to follow, the toxin was administered with the first few cubic centimeters of the diuretic solution. Three diuretic solutions were used: (1) an alkaline hypertonic salt solution (sodium chlorid, 2.2 per cent., and sodium carbonate, 0.371 per cent.; (2) an 18 per cent. glucose solution, and (3) an 18 per cent. glucose solution having the salt content of Ringer's solution (sodium chlorid, 0.7 per cent., potassium chlorid, 0.03 per cent. and calcium chlorid, 0.025 per cent.)

The diuretic solutions were administered as in the experiments described in previous publications. In the first series of four experiments we gave more than the predetermined fatal dose of diphtheria toxin in the hope of obtaining a decisive therapeutic result. These dogs received 0.030 c.c. of the diphtheria toxin per kilogram of body weight instead of the 0.021 c.c.

RESULTS OF EXPERIMENTS

No.	Wt. of Dog, Kg.	Total Dose of Diphtheria Toxin, C.c. per Kg.	Intravenous Therapy					Urine, C.c.	Duration of Life, Days
			Diuretic Solution	C.c. per Kg. Hour	Duration of Injection, Hrs.	Total Amt. Injected	Fluid Used to Preserve Water Balance		
1	11.25	0.021	.....	....	.....	.....	.....	.....	3½
2	8.64	0.021	.....	....	.....	.....	.....	.....	3½
3	12.28	0.021	.....	....	.....	.....	.....	.....	6
4	15.11	0.021	.....	....	.....	.....	.....	.....	6
5	14.28	0.021	.....	....	.....	.....	.....	.....	14
6	11.82	0.030	.....	....	.....	.....	.....	.....	4
7	10.91	0.030	.....	....	.....	.....	.....	.....	5
8*	10.80	0.030	Alkaline salt solution	30	3	1,083	0	963	3
9*	5.11	0.030	Alkaline salt solution	30	4	628	915 c.c. water	827	5
10	20.00	0.021	Glucose, 18%	30	3	1,810	300 c.c. water	2,717	2
11	16.25	0.021	Glucose, 18%, in Ringer's solution	30	3	1,470	478 c.c. water	1,355	Lived
12	15.00	0.021	Glucose, 18%, in Ringer's solution	30	3	1,356	86 c.c. Ringer's	1,056	4
13	17.84	0.021	Glucose, 18%, in Ringer's solution	30	3	1,628	143 c.c. Ringer's	1,410	4
14	24.55	0.021	Glucose, 18%, in Ringer's solution	30	2	1,422	475 c.c. Ringer's	1,670	4
15	11.25	0.021	Glucose, 18%, in Ringer's solution	30	2	646	0	605	4
16	10.57	0.021	Glucose, 18%, in Ringer's solution	30	3	963	0	810	5

* Marked catharsis.

The two controls (Dogs 6 and 7) lived three and five days, respectively. The first treated dog (Dog 8), weighing 10.80 kg., received 30 c.c. of the alkaline salt solution per kilogram hour for three hours, a total of 1,083 c.c., and passed during that time 963 c.c. of urine. There was also a marked catharsis, which accounts for the urinary output being less than the fluid intake. This dog lived three days. The second treated animal (Dog 9), weighing 5.11 kg., received 30 c.c. of the same alkaline salt solution per kilogram hour for four hours, and also sufficient water from the second machine to prevent dehydration. During the four hours this dog received 1,543 c.c. of fluid, 628 c.c. of the alkaline salt solution and 915 c.c. of water, and passed 827 c.c. of urine and numerous watery stools. This dog lived five days.

We poisoned the remaining seven dogs in this series with the marginal fatal dose of diphtheria toxin, that is, 0.021 c.c. per kilogram. Dog 10, weighing 20 kg., received the 0.021 c.c. per kilogram with the first few cubic centimeters of an 18 per cent. glucose solution, which was given at the rate of 30 c.c. per kilogram per hour for three hours. During the three hours the dog received 1,810 c.c. of the glucose solution and 300 c.c. of water, and passed 2,717 c.c. of urine. This was the greatest diuresis of any in the series. The dog lived only two days, or less time than any other animal in the series. The treatment appeared to have done harm rather than good.

This phenomenon of shortening rather than prolonging life we had noted before in the mercuric chlorid series, and in searching for a possible cause considered the idea that it might be due to the wholesale washing out of urea, chlorids and other essential salts of the body. With the next group of six animals, we poisoned as before, and used an 18 per cent. glucose solution having the salt content of Ringer's solution, preserving the water balance by the addition of extra Ringer's solution when needed. Dog 11 made a complete recovery, but the next five animals (Dogs 12, 13, 14, 15 and 16) died in four, four, four, four and five days, respectively. We were inclined to believe that the dog which lived had an unusually high resistance for diphtheria toxin, since something similar had been observed in Control Dog 5, which lived fourteen days.

In these experiments, water was passed through dogs at the rate of 30 c.c. per kilogram of body weight per hour for three or four hours. The same procedure, if carried out in the case of a man weighing 70 kg., would imply the intravenous injection of 2,100 c.c. of fluid per hour for a total of 6,300, or 8,400 c.c. in three or four hours, nearly all of this passing promptly out by way of the kidneys and bowel.

CONCLUSIONS

The intravenous injection of an alkaline hypertonic salt solution, an 18 per cent. glucose solution or an 18 per cent. solution of glucose in Ringer's solution failed to prolong the life of dogs poisoned with diphtheria toxin even when treatment was begun at the most favorable time, that is, simultaneously with the administration of the poison. These negative results discourage attempts to apply an identical procedure in clinical cases of diphtheria.

Mammary Cancer in Infants.—Dr. D. Z. Blanc reported at a recent meeting of the Spanish Gynecologic Society that in the last year he had encountered two cases of cancer of the mamma in young infants. One was a male child. The mamma had begun to enlarge soon after birth and at the age of 6 months the epithelioma had invaded the entire mamma and the glands in the axilla, but there was no ulceration and the growth was not adherent to the pectoralis muscle. Blanc excised the mamma, the pectoralis and the contents of the axilla. Three months later the child died from recurring hemoptysis. In the other case the cancer developed in the same way soon after birth and in a few months spread to the axilla and into the hypochondrium. It was inoperable when he first saw the child. Blanc stated that hemorrhage from the lungs, probably of cancerous origin, is not an uncommon complication after removal of mammary cancers in adults. Injecting a stain under pressure into the lymphatics of the mamma to ascertain the area of probable diffusion, he found the entire pleura colored by the stain, both the parietal and the diaphragmatic pleura. His communication is reproduced in the *Revista de Medicina y Cirugia Practicas*, 1917, **41**, 216, with the hypothesis he presents to explain these cancers in the new-born.

POINTS IN TECHNIC OF SEPARATING ANAEROBES *

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It is the almost universal experience of careful workers with anaerobic bacteria that difficulties are numerous in the sure isolation of a single strain from a mixed culture. The following seem to be the main sources of difficulty, with means of correction:

(*a*) The direct plating of exudate presents great difficulties on account of the cohesion of the material. A preliminary anaerobic culture in bouillon results in a fairly even suspension, some separation, and a medium that can easily be diluted. Plating from a culture in chopped meat medium or milk, or from surface cultures makes an even suspension more difficult.

(*b*) There is frequent tendency of organisms, especially when encapsulated, to stick together to a certain extent. Two different bacilli which are still adherent after the plating is completed may grow and form what appears to be a single colony. If the bacilli are very similar morphologically, deception is easy.

The ordinary method of making successive dilutions in agar is not reliable as a method of separation. The thick consistency of the medium prevents the bacteria from being greatly affected by shaking or stirring. Attempts at thorough mixing aerate the agar and make it more difficult to obtain anaerobiosis.

Grinding the culture between glass slides destroys many organisms, and when dilutions are made the bacteria may again adhere. It seems better to make the separation in the dilution from which the planting is to be done.

Shaking the culture, or a dilution in salt solution is more effective, but is not alone sufficient for many cases. Shaking with glass beads is better. A method, however, which has been found to be most effective consists in shaking the culture in salt solution in a corked test tube containing about ½ inch of coarse sand. Sea-sand is washed by being repeatedly placed in a basin, stirred, and decanted as rapidly as possible so that only the coarse grains settling very rapidly are left. Organisms, growing in bouillon in auto-agglutination, with clumps absolutely unaffected by ordinary shaking, even when long continued, could thus be broken up.

A number of experiments were tried with a strongly auto-agglutinable bacillus to see the effects of the addition of various substances to the salt solution on the adhesiveness of the bacilli. Alcohol, soap, sodium carbonate, hydrochloric acid, acetic acid and tannic acid were tried in several dilutions. The acids appeared to hinder separation; tannic acid seemed actually to cause adhesions. Dilute soap or sodium carbonate had a slight but definite tendency to help the separation.

* For ordinary purposes, physiologic sodium chlorid solution seems sufficient.

After a moderately slight dilution of the bouillon culture is thoroughly shaken in a sand tube, a further dilution is made into a second sand tube, which is thoroughly shaken, and so on.

It was found that the aeration produced by shaking had no effect if the plating was done within a few minutes afterward.

(*c*) The difficulty of fishing deep colonies makes surface sowing advisable.

(*d*) Moisture on the plate results in colonies running together. This is especially bothersome when the plates are made anaerobic by the hydrogen and palladium sponge method. For this reason it seems better to either (1) make cultures on the surface of slants in test tubes, the cotton preventing the entrance of the water from the hydrogen and oxygen; to (2) put some water-absorbing substance in the anaerobic jar; or to (3) use the pyro-soda method. It is, of course, important to have the medium of the right degree of moisture to start with.

(*e*) One of the most interesting sources of difficulty is due to the tendency of numerous anaerobic organisms to produce spores. If a spore lies dormant on the medium so that it is included in a colony that grows over it, it may be fished when the colony is picked off, and grow later in the subculture. Or it may start to grow later than the vegetative bacilli, and the colony formed by it be so small at the time of fishing that even if it is included in a larger one, it will not be noticed.

The remedy for this difficulty is:

1. To have a most favorable medium for the bacteria, so that spores will germinate to as high a percentage as possible and as quickly as possible.
2. To have good anaerobiosis to favor growth of spores.
3. To allow time for the spores to produce noticeable colonies.
4. To pick off the surface of colonies without touching the agar. This is easier, the more luxuriant the growth.

It follows that the best portion to touch is where the colony is definitely heaped up or fairly thick, but at some distance from the center, in order to get a recent growth. A point half way from the center to the edge usually satisfies these conditions sufficiently well.

The matter of a favorable medium is important. Ordinary agar or sugar agar, or even agar made with tryptic broth is not as good as egg mediums. Extremely good results are obtained by the egg medium of Stitt (from 10 to 15 c.c. of bouillon to each egg, beaten, tubed and inspissated), with the following modifications. The bouillon used is made by adding to beef infusion broth an equal volume of either meat or casein digested by trypsin or pancreatic extract and filtered.[1] One per cent. glucose is added, and the reaction made slightly alkaline to litmus. This medium is quickly and easily made, and the materials can always be obtained. Slants are made in fairly wide test tubes. To get a perfectly smooth surface, the egg-bouillon mixture is allowed to stand in the tubing funnel for at least one-half hour after beating, and after tubing brought up very slowly to 85 or 90 C. in the inspissator, thus getitng rid of small bubbles.

Good anaerobiosis can be obtained by the pyro-soda or the palladium sponge method. The most practical forms of these methods seem to be: (*a*) the Wright method for single test tubes[2]; (*b*) the Bullock jar for several tubes or plates at one time, and (*c*) McIntosh and Fildes palladium-asbestos tins and test tubes.[3]

* From U. S. Army Base Hospital No. 5.

1. Cole, S. W.: Lancet, London, 1916, **2**, 9.
2. Mallory and Wright: Pathological Technique, Ed. 6, p. 128.
3. McIntosh, J., and Fildes, P.: Lancet, London, 1916, **1**, 768; Compt. rend Soc. de Biol., 1916, **79**, 293.

The pyro-soda method for plates, as applied by several devices, is less convenient and takes more time. In any case the removal of air from the medium by heating to from 90 to 100 C. just before planting is advisable.

(*f*) The tendency for anaerobes to grow much more easily in symbiosis with aerobic organisms when anaerobiosis is not good makes it necessary to be careful in anaerobic methods.

(*g*) The motility of many anaerobes is an additional reason for care in reducing excessive moisture in the surface of the medium.

The main steps in the method are as follows:

1. An anaerobic culture is made in 1 per cent. glucose bouillon.

2. Successive dilutions are made in physiologic sodium chlorid solution and are shaken thoroughly in corked test tubes containing coarse sand.

3. From each dilution, successive streaks are made on the three or four slants of the modified egg medium of Stitt, made with tryptic broth, with 1 per cent. glucose.

4. They are grown two or three days under good anaerobiosis.

5. Fishing is done from the upper surface of colonies without touching the agar.

CASES SHOWING REMOTE RESULTS OF TESTICLE IMPLANTATION

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As I exhibited the first of the patients to a number of the members of the American Urological Association, and both patients at the meetings of the Chicago Urological Association in October and November last, there will be no difficulty in verifying the findings given below. As the cases already have been reported in detail, I will give at this time only a brief outline:

REPORT OF CASES

CASE 1.—A man, aged 30, had completely lost both testicles from infection following trauma. There were moderately marked feminine secondary sex characteristics; excessive and feminine distribution of fat was especially noticeable. There was complete impotence, with decided mental and physical inefficiency. Double scrotal implantation of entire testicles was performed, Aug. 1, 1915. The material was taken from a boy of 14, killed by a crushing injury. The testes were removed six hours after death, and kept on ice for thirty-three hours. Local progress of the case was uneventful. The patient returned home at the end of two weeks.

Three weeks later, he engaged successfully in coitus. His mental and physical efficiency rapidly improved and soon became normal. There was a gradual diminution of the flabby, feminine adipose tissue, with an increased masculinity of type. The condition at present, two years and a half after operation, is very satisfactory. The patient is athletic in appearance and indulges freely in athletic sports. He has lost 40 pounds of excess fat. His mental and physical efficiency and sexual power are normal.

The implanted testes still are in situ. The organs are somewhat smaller than those of the average boy of 14, and quite firm. At the time of operation, a small nodule about the size of a grain of wheat was found at the extremity of the cord on each side. These nodules have grown considerably, and are now about as large as good-sized peas. From present indications, I feel justified in believing that the results of the implantation of testicles in this case will be permanent.

CASE 2.—A boy, at the age of 13, had suffered severely from a vaccination, probably with a mixed infection. Shortly after the vaccination, which, he stated, made him very ill, he developed orchitis in one testicle, probably from an infected embolus. Following the orchitis the testicle atrophied. Several weeks later, the opposite testicle became similarly involved and speedily atrophied. Coincidentally, the penis became distinctly smaller. Some months later, the patient was examined by several surgeons, who diagnosed retained testis on the left side and suggested operation. The patient subsequently, when 17 years of age, was referred to me. He was tall and healthy looking, with distinctly feminine secondary sexual characteristics. The pelvis, mons veneris and mammary glands were suggestive of a girl just entering on puberty. No beard was in evidence, and the complexion was distinctly of the "milk and blood" feminine type. There was a bare suggestion of hair on the pubis. The left testicle was represented by a small, hardly perceptible nodule about as large as a small pea just below the external inguinal ring. The right testis was soft, outlined with difficulty, and about the size and shape of a small lima bean. The penis was no larger than that of a well developed child of 5 or 6 years of age. The voice was that of the usual boy of 17. Psychically, the boy fortunately was a normal, manly fellow, although there were no signs of virility.

After about six months' treatment with faradism with some slight improvement, I suggested an implantation. Other advice was sought, and several surgeons—one supposedly an authority—suggested operation for retained testis, despite the feminine sexual characteristics, and local conditions that plainly showed the absurdity of such an operation. The patient passed from my observation and did not return until two years later, when I found that an operation had been performed on the left side, with the inevitable result that the remnant of testicle on that side had completely disappeared.

At the second examination, the condition in general was the same as it had been two years before, save that the secondary feminine sexual characteristics were more pronounced. There still had been no manifestations of virility. The pelvis was distinctly feminine, and the mons veneris was covered with a well pronounced cushion of fat and very sparsely supplied with small hairs, the arrangement of which was suggestive of that of a young girl approaching puberty. The beard still was lacking. Implantation of the testes again was suggested and consented to.

The operation, scrotal implantation, was performed, Oct. 27, 1916. The material used was taken from a healthy boy, aged 15, twenty-four hours after death from carbon monoxid poisoning. The glands were refrigerated thirty-two hours. The epididymides were not removed, and the testes were not decorticated. There was very little reaction and practically no elevation of temperature following the operation, but the patient was kept in bed for ten days.

Sixteen months after the implantation, the implanted testes still are well defined, the right gland being much larger than the left, and both being as large as those of the average lad of from 12 to 14. The consistency of both glands is softer and more nearly approximates the normal than have any other thus far implanted. The patient has gained weight and strength and is virile, as demonstrated by moderately frequent erections and the fact that he has cohabited thrice in succession on numerous occasions, with orgasm and emission. Penile development has greatly increased, and the pubic and scrotal hair also has increased and assumed a more masculine type. The lines of the patient's body have changed appreciably and become more masculine in conformation, the cushion of fat on the mons veneris, especially, being reduced in size. The patient's own atrophied right testicle has increased in size and firmness, and the epididymis—which could not be discerned at the time of the implantation—now can be plainly outlined. The voice is distinctly more masculine; the beard is heavier, and a growth of hair has appeared on the forearms. As in Case 1, I believe that the results in this case are likely to be permanent. It must be remembered that these two cases comprise four distinct and separate successful testicle implantations.

COMMENT

I not only feel that my published impressions of the value of the sex gland implantation — notably in the matter of increasing physical efficiency, and especially physiosexual efficiency — have been confirmed by further experience, but I also am convinced that, when technic and material are right and the recipient is properly selected, continuity of hormone production by the implanted gland for at least a prolonged period is certain. That permanently beneficial physiologic and therapeutic results are equally certain seems probable. Thus far I have observed no case in which the implanted tissue has completely or even practically disappeared, prior to from twelve to eighteen months. In brief, I am convinced that my method of sex gland implantation long since has been taken from the purely experimental field, and that it now stands on firm ground as a valuable therapeutic resource.

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TOXICITY OF THE AMERICAN-MADE ARSPHENAMIN (SALVARSAN)

REPORT OF CASES

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At the outbreak of the world war, the original German-made salvarsan practically ceased being marketed in America as well as in France and England. The demand for the preparation had already assumed massive proportions. The natural result of this unsupplied demand was the manufacture of similar, if not identical, products by various concerns. Diarsenol, arsenobenzol, arsenobenzol "Billon" and other preparations were soon marketed as its substitute. Recently a preparation has appeared under the trade name of "Salvarsan," (arsphenamin) ostensibly manufactured in this country under the direction of the Farbwerke-Hoechst Company and by the process employed in the manufacture of the old German-made salvarsan.

Taking advantage of the large syphilitic clinic at the Marquette University School of Medicine, I have been attempting to arrive at some conclusions as to the relative therapeutic value and toxicity of these different preparations. A paper outlining this work is in the writing.

Recently the dispensary has been able to obtain some of the new arsphenamin now being made in New York by representatives of the Farbwerke-Hoechst Company of Germany. Having this new shipment at hand, I decided to give it a trial on five patients who had reported that day for an arsphenamin treatment. Three ampules, each containing 0.6 gm. of arsphenamin, were inspected and found not to be cracked. The contents of each was of the characteristic pale yellow color. The total of these ampules was dissolved in 225 c.c. of sterile water which had been distilled less than two hours before. After the arsphenamin was entirely dissolved, the solution was alkalized by the addition of a sufficient quantity of 15 per cent. sodium hydroxid to form and redissolve the precipitate. It might be said that this technic, together with that of the injection of the solution, was identical with that used in the administration of some 200 doses of salvarsan given in the past six months.

REPORT OF CASES

Case 1.—A young woman, with a recently suppressed secondary syphilis, had received five salvarsan treatments at intervals of two and three weeks without notable reactions. She was given 50 c.c. of the prepared solution (0.4 gm. of salvarsan) in one of the arm veins. As she was leaving the building she became cyanotic and fainted. She soon regained consciousness and began vomiting severely. When I saw her about fifteen minutes later she was very pale, had a fast, thready pulse, was still vomiting and was in a violent chill in spite of blankets. After an hour's rest she was sent home in an ambulance. She subsequently reported that she continued nauseated and chilled for about twelve hours.

Case 2.—A young man, suffering from an active hereditary syphilis, had received one injection of salvarsan the week before. No reaction followed. He was given 50 c.c. of the prepared solution (0.4 gm. of salvarsan). He walked to an adjoining room and was forced to sit down because of a sudden dizziness. He became cyanotic, was nauseated, and hungered for air. His pulse rose above a hundred and was of little volume. After resting an hour, he was allowed to return home. He subsequently reported that he had a severe headache, was nauseated, and remained very chilly for four hours despite going to bed.

Case 3.—A small colored boy, with an active hereditary syphilis, had received one salvarsan treatment the week before without reaction. He was given 25 c.c. of the solution (0.2 gm. of salvarsan) and left the dispensary. His guardian subsequently reported that he appeared to have suffered no reaction.

As I was about to give the fourth injection, I was informed of the condition of Patients 1 and 2. Becoming alarmed, I tested a part of the remaining solution with dilute hydrochloric acid and found that the precipitate reformed on acidulation. Being satisfied that the solution was properly alkalized, I diluted it with freshly distilled and sterilized water so that 50 c.c. contained a fraction less than 0.3 gm. of salvarsan.

Case 4.—A middle aged man, suffering a late syphiloderm, had received an injection of salvarsan the week before without reaction. He was given 50 c.c. of the remaining solution (0.3 gm. of salvarsan). Arising from the table, he complained of dizziness and faintness; but after resting a half hour he decided to return home. He subsequently stated that he suffered only a slight headache for the following twelve hours.

Case 5.—A young man in the late primary stage of syphilis had received no previous treatment. The needle was introduced into the vein, and the solution allowed to run. After 30 c.c. (0.18 gm. salvarsan) had been injected, he began coughing, became cyanotic, and complained of air hunger. The injection was stopped. The pulse became rapid and thin. In spite of blankets he continued in a violent chill for thirty minutes. After an hour his color returned and he was allowed to go home. He subsequently reported that he remained chilly, nauseated and with a bad headache for the following four hours. This patient had had a preliminary cathartic.

COMMENT

Having been convinced that these five cases alone were sufficient to give a very definite idea of the toxicity of the new American-made salvarsan (arsphenamin), I have abandoned its use. Realizing the wide reputation previously enjoyed by the old German-made product and the stimulus which that reputation is certain to give to the sale of the new American-made salvarsan, I have been constrained to make an early report of these cases, hoping to save others from my uncomfortable experience.

END-RESULTS OF FRIEDMANN'S VACCINE

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Friedmann's attempt to cure tuberculosis by inoculation of patients with large doses of living acid-fast bacilli must ever remain of interest to medical men. The temporary results from the vaccine in 120 of our patients treated in 1913 appeared in an earlier report.[1] Observers may honestly differ as to whether a remedy has been beneficial to living patients, but the fact of death and the value of the mortality rate in determining results cannot be successfully disputed. In the accompanying tables the Friedmann cure is subjected to the acid tests of time and the mortality rate.

TABLE 1.—RESULTS IN ONE HUNDRED AND TWENTY CASES TREATED WITH FRIEDMANN'S VACCINE IN 1913

On Admission	Well	Living and Working	Living	Dead	Unknown	Totals	Per Cent. Living, Jan. 1, '17
Tubercle bacilli in sputum:							
Incipient	0	0	0	0	0	0	00.0
Mod. Adv. I ..	4	0	0	9	0	13	30.8
Mod. Adv. II..	2	5	1	21	1	30	27.6
Mod. Adv. III.	1	0	7	19	0	27	29.6
Total Mod. Adv.	(7)	(5)	(8)	(49)	(1)	(70)	28.98
Far Adv. II ..	0	0	0	3	0	3	
Far Adv. III ..	0	0	1	6	0	7	10.00
Totals	7	5	9	58	1	80	26.58
Tubercle bacilli absent from sputum:							
Incipient	0	1	1	0	0	2	100.00
Mod. Adv. I ..	9	6	5	3	0	23	86.9
Mod. Adv. II ..	5	5	0	1	1	12	90.9
Mod. Adv. III	1	1	1	0	0	3	100.00
Total Mod. Adv.	(15)	(12)	(6)	(4)	(1)	(38)	89.2
Far Adv.	0	0	0	0	0	0	
Totals	15	13	7	4	1	40	89.7
Grand totals ..	22	18	16	62	2	120	47.46

For purposes of comparison with Table 1, Table 2 has been prepared, giving in similar form the results of routine sanatorium treatment in all cases in which the patients were discharged during 1911.

TABLE 2.—RESULTS OF SANATORIUM TREATMENT OF TWO HUNDRED AND EIGHTY-SEVEN PATIENTS DISCHARGED DURING THE YEAR 1911

On Admission	Well	Living and Working	Living	Dead	Unknown	Totals	Per Cent. Known Living Jan. 1, '16
Tubercle bacilli in sputum:							
Incipient	3	0	0	0	..	3	100.00
Mod. Adv. I ..	4	3	2	4	..	13	69.23
Mod. Adv. II.	11	8	10	42	..	71	40.84
Mod. Adv. III	2	6	8	86	..	107	19.62
Total Mod. Adv.	(22)	(17)	(20)	(132)	..	(191)	30.88
Far Adv.	3	0	0	17	..	17	0
Totals	25	17	20	149	..	211	29.38
Tubercle bacilli absent from sputum:							
Incipient	10	3	0	0	1	14	100.00
Mod. Adv. I ..	20	7	6	2	..	35	94.28
Mod. Adv. II..	12	4	5	3	1	25	87.50
Mod. Adv. III.	0	0	0	2	..	2	0
Total Mod. Adv.	(32)	(11)	(11)	(7)	(1)	(62)	88.51
Far Adv.	0	0	0	0	..	0	0
Totals	42	14	11	7	2	76	90.54
Grand Totals..	67	31	31	156	3	287	45.26

From these tables it appears that the sanatorium cases in the bacillary group had 29.38 per cent. survivors against 26.58 per cent. Friedmann survivors, and in the nonbacillary group the sanatorium had 90.54 per cent. survivors against 89.7 per cent. Friedmann survivors. If patients discharged during 1912 are examined, we find three and one-half years afterward that both bacillary and nonbacillary groups taken together had 48.24 per cent. survivors against Friedmann's 48.33 per cent. survivors at the end of the same period. Another group of twenty-three ex-patients reported to us that they had received the Friedmann treatment during 1913, after leaving the sanatorium. Only seven, or 40.4 per cent. of the patients, were living, Jan. 1, 1917. The duration of life after taking the vaccine of the sixty-two patients reported dead in Table 1 is shown in Table 3.

TABLE 3.—DURATION OF LIFE AFTER TAKING THE VACCINE OF THE SIXTY-TWO PATIENTS REPORTED DEAD IN TABLE 1

Under 3 months	1
From 3 to 6 months	3
From 6 to 12 months	6
From 1 to 2 years	26
From 2 to 3 years	19
Over 3 years	7
Total	62

TABLE 4.—MORTALITY ACCORDING TO DOSES

No. Doses	Living No.	Living Per Cent.	Dead No.	Dead Per Cent.	Unknown No.	Unknown Per Cent.	Total Cases
One	31	50	32	50	1	1	64
Two	22	51	21	49	..	..	43
Three	2	25	6	75	..	..	8
Four	2	40	3	60	..	..	5
Totals ...	57	47	62	52	1	1	120

All the Friedmann patients had had the benefit of sanatorium treatment for many months, thirty-five being arrested or quiescent when the vaccine was given, and eight being ex-patient employees of the sanatorium who asked for the vaccine more to insure against relapse than because they had active disease. The vaccine was further favored in the foregoing comparison in that its survivors had been away from the sanatorium nearly a year's shorter time than the sanatorium survivors of 1911, and consequently the Friedmann survivors should have had a lower mortality rate.

CONCLUSION

From all these considerations it appears certain that this vaccine had no beneficial effect on the patients.

1. Barnes, H. L.: Clinical Report on Friedmann's Vaccine, abstr., THE JOURNAL A. M. A., Sept. 27, 1913, p. 1066.

Artichokes as Food.—In the *Scientific Monthly* (March, 1918), Prof. T. A. Cockerell of the University of Colorado writes of the so-called Jerusalem artichoke, or the girasole, as he prefers to call it, as a neglected article of food. This tuber is native to the American continent, one of the few contributions to the vegetables of the world. Though growing prolifically, without much labor in the cultivation, very little attention is given to it. It is known that it has produced as much as 20 tons to the acre, and is valuable as a food for hogs, which animals harvest the crop themselves. Its use for human food is perhaps even less well understood and it is even less eaten now than some years ago. Analysis of the tuber, however, show that it is of almost the same food value as the potato, though the carbohydrate content is different and is said to require further investigation. It may be eaten raw or cooked. In the latter form it may be used in soups, in salads sliced with egg, celery or endive, with French or maionaise dressing; sliced, boiled or steamed tubers may be covered with milk, seasoned, covered with bread crumbs and then baked. Grated cheese may be added to this dish. Finally, they may be boiled, mashed, creamed, seasoned, rich white sauce added and eaten on toast. Professor Cockerell says that the cultivation of this plant, especially in small gardens, may add very considerably to the food resources of the country at a time when such increase is more than desirable.

Military Medicine and Surgery

A NEW ADAPTATION OF THE FACE MASK IN CONTROL OF CONTAGIOUS DISEASE

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One of the most troublesome problems confronting the medical staff of the base hospitals in camps is the prevention of cross infections.

A mistaken diagnosis in the examining room may place measles in a scarlet fever ward, or meningitis in a clean diagnostic ward. These mistakes are partially remedied by sending all doubtful patients to an observation ward, where they may be differentiated at leisure.

The development of a secondary infection as a result of an exposure some time previous to entrance into the hospital is unavoidable.

On the other hand, the contraction of a secondary infection directly from another individual in the same ward demands the most serious effort in the way of prevention. When a case of scarlet fever breaks out in a measles ward, the ward must be placed in quarantine for a week. By the end of the week another case may develop and require another week of quarantine. This may go on indefinitely so that the ward is barred from either receiving or discharging patients.

Most contagious diseases, such as measles, German measles, scarlet fever, pertussis, meningitis and diphtheria, are transmitted from one person to another by means of the secretions of the nose and mouth. Coughing, sneezing and talking convey the bacteria-laden droplets of mucus through the air.

The cubicle system, now used extensively in the Army hospitals, and consisting of sheets suspended on wire between the beds, restricts the dissemination of droplets so long as the patients remain in bed.

In addition to this system we have carried out from the beginning, at the Camp Grant base hospital, the practice of requiring physicians, nurses and ward men to wear gowns and gauze face masks. In this we have followed as closely as possible the methods employed at the Durand Hospital in Chicago. Weaver,[1] in a recent report, shows the efficacy of the mask at the Durand Hospital in protecting the physicians and nurses from contracting contagious diseases and from becoming carriers of meningococci and diphtheria bacilli. We can also attest to the remarkable protection of the mask at Camp Grant, for during the first five months not one nurse or physician contracted the disease of the patients with whom he or she was working. With all these measures, however, we were unable to prevent the spread of cross infection from patient to patient, since we have no facilities for effectively separating patients in a ward once exposed to a fresh contagious disease. The cubicle segregates the bed patients, but it is almost impossible to confine convalescent soldiers day and night to bed; furthermore, it is not possible to furnish the necessary service in nursing, bathing and feeding to render such segregation effective. The patients use a common wash room and latrine, and hence the opportunity of transmission is unlimited.

The quarantine of several measles wards at a time by successive outbreaks of scarlet fever created at Camp Grant, last winter, an acute situation. To relieve this situation we carried out an experiment, the description of which is my purpose in this preliminary paper.

MASKING THE PATIENT

The face mask has proved an undoubted success in protecting physicians and nurses from contagion. It seems reasonable that patients by wearing the mask should receive similar protection from either primary contagion, or if already ill with one infection, from a second contagion.

The experiment of masking the patients was first tried in a measles ward in which six successive cases of scarlet fever had developed at intervals of several days. After the introduction of this method, one more case of scarlet fever broke out in five days, but none subsequently. The system has since been tried in other wards with excellent results. In general wards exposed to scarlet fever the masks are worn by all patients for one week after the last exposure.

The essential principle of the method is that patients out of bed and out of the cubicle must never be unmasked, except when alone in the wash room. In order to make it effective a number of precautions are necessary. The following rules are posted in each ward and latrine:

RULES FOR CONTAGIOUS WARDS

1. A face mask must be worn continuously by all patients when out of cubicle.
2. In the latrine the mask may be removed only by permission and under the direct supervision of ward nurse.
3. Wash basins and bath tub are not to be used. For washing face and brushing teeth use running water over sink. Shower may be used under supervision. Use only liquid soap from container.
4. Only one patient will be allowed in the wash room at one time. Remove mask on entering and replace before leaving wash room.
5. Masks may be removed when patients are in bed.
6. Sheets between beds are not to be drawn back.
7. No smoking allowed.
8. Corps men, nurses and surgeons should wear masks and gowns when on duty in the ward. A guard should be on duty continually near the wash room.
9. All eating utensils should be sterilized after each meal.

MASKING PATIENTS IN THE AMBULANCE

Many patients in the hospital break out with a fresh contagious disease, the incubation period of which corresponds to the length of time they have been in the hospital. This circumstance strongly suggests that the disease was contracted on the date of admission. As patients with different infections frequently come to the hospital together in the same ambulance, the chance of cross infections is obvious. Attempts to avoid this danger by grouping cases affected with the same disease have been futile, because many are sent to the hospital at the beginning of fever or eruption and are not yet diagnosed. Further exposure to contagion takes place in the admission room, where patients are often crowded together awaiting examination.

To guard against this danger we have made it a rule that *every patient before entering the ambulance shall put on a face mask and continue to wear it until he*

1. Weaver, G. H.: The Value of the Face Mask and Other Measures, The Journal A. M. A., Jan. 12, 1918, p. 76.

reaches his bed in the ward. This applies to all patients, whether they have any communicable disease or not.

It is too early to say to what extent this masking of patients in the ambulance has prevented cross infections, but we believe it has lessened the number materially.

AN ANALYSIS OF GOVERNMENT CARDIOVASCULAR EXAMINATIONS

AS CONDUCTED AT THE BASE HOSPITAL, CAMP HANCOCK, AUGUSTA, GA.

S. CALVIN SMITH, M.D. (PHILADELPHIA)
Captain, M. R. C., U. S. Army

CAMP CUSTER, BATTLE CREEK, MICH.

These statistics have been compiled from the cardiovascular examinations of members of the Twenty-Eighth Division, N. G., recently completed. The total strength of the command approximated 35,000 men, of which number 1.11 per cent. were recommended for discharge, which recommendations form the basis of this analysis. While absolute statistics are of course not available, owing to the constantly changing personnel of the division, sufficient data from the cardiac examinations are available to form a figure basis for this report.

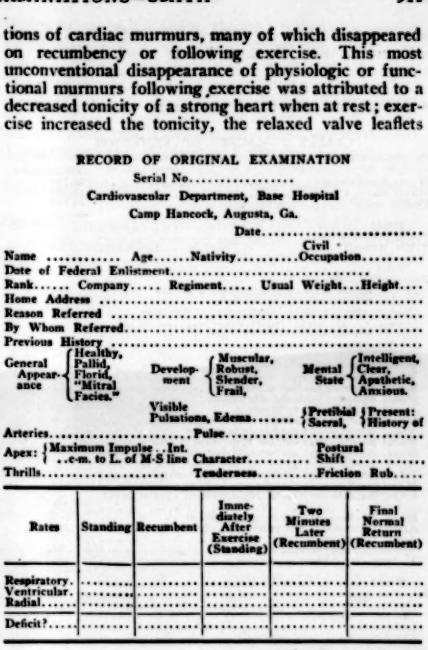
Familiar methods of physical examination were employed, plus the instrumental aid of the stethoscope, sphygmomanometer and polygraph. It is to be regretted that electrocardiography was not available, especially for the information which it would have afforded in differentiating the tachycardias, which may have been due to vagal or sympathetic nerve influence and hence extracardiac in origin, or which may have arisen from irritable or degenerative foci within the auricular or ventricular muscle. Further, the written record obtained from electrocardiography in borderline or in doubtful cases would be of profound statistical importance for future heart recruiting standards, when considered in connection with the subsequent sick reports of such men who are now accepted for service.

THE RECORDING OF EXAMINATIONS

A blank, the form of which is given herewith, was filled out for each man examined. The individual records were made available for future reference by cross-indexing the serial number under the headings "Patient's Index" and "Diagnosis Index." In order to facilitate the work of the clerk who recorded the findings as called off by the examining physician, certain standard descriptive words were printed on the blank that required only an underscoring stroke of the pen to record. The form is self-explanatory.

BASIS FOR REJECTIONS

The principles of interpretation of cardiac disease, as laid down in Circular 21, Surgeon-General's Office, July 14, 1917, were followed so far as any set of rules could govern the indivjdual case being considered. Further than this, visible pulsations which were not due to emotional disturbance, accelerated pulse rates not attributable to the same cause, maximum cardiac impulses displaced downward or to the left, and any changes in rate, rhythm or volume of the pulse, were all accorded more significance than were the detections of cardiac murmurs, many of which disappeared on recumbency or following exercise. This most unconventional disappearance of physiologic or functional murmurs following exercise was attributed to a decreased tonicity of a strong heart when at rest; exercise increased the tonicity, the relaxed valve leaflets



RECORD OF ORIGINAL EXAMINATION

Serial No.....
Cardiovascular Department, Base Hospital
Camp Hancock, Augusta, Ga.
Date.....

Name ..... Age.....Nativity.....Civil Occupation.....
Date of Federal Enlistment.....
Rank..... Company..... Regiment..... Usual Weight...Height....
Home Address .....
Reason Referred .....
By Whom Referred.....
Previous History .....

General Appearance { Healthy, Pallid, Florid, "Mitral Facies." } Development { Muscular, Robust, Slender, Frail, } Mental State { Intelligent, Clear, Apathetic, Anxious. }

Visible Pulsations, Edema..... { Pretibial / Sacral, } { Present: History of }

Arteries.....Pulse.....

Apex: { Maximum Impulse .. Int. .. c-m. to L. of M-S line } Character..... Postural Shift .....

Thrills..... Tenderness.....Friction Rub.....

Rates	Standing	Recumbent	Immediately After Exercise (Standing)	Two Minutes Later (Recumbent)	Final Normal Return (Recumbent)
Respiratory					
Ventricular					
Radial					
Deficit?					

Cardiac Borders: (4)..... M / A / S .....(5)

Blood Pressure: { Brachial / Femoral } Systolic ... / Diastolic .. / Pulse Pressure.

Transverse Diameter of Arch.....Cardio-hepatic Angle.....

Murmurs: { Apical / Basal } { Systolic, Presystolic: Diastolic: Systolic. }

Transmission: { Over Precordium: To Axilla: To Back. Along Heart Border: To Vessels of Neck. }

Accentuations: A..; T..; P..; M..; Reduplication.....

Arrhythmia { None. Disappears on Exercise. Increases on Exercise. } Graphic Record.....

Clinical Tests: Wassermann..... Roentgen Ray.....

Urine.....Renal Function.....

Remarks: .....
.....
.....

Diagnosis: .....

Recommendation:—(1)—Acceptance. (2)—Discharge. (3)—Acceptance for Special Service. (Cross out two)

Record Clerk: .....

Reviewed and approved by Dr. S. CALVIN SMITH, ...
In Care of Cardiovascular Diseases.

came again into apposition, and the murmur consequently disappeared. Full significance was of course accorded to a murmur which persisted at a given area and which was accompanied by accentuations of other sounds, provided it was transmitted along the usual classical lines for a given murmur, or accompanied by the characteristic thrills, by increased transverse diameters of given chambers of the heart, or by other frank evidences of cardiac disease.

The exercise test of hopping 100 times on one foot yielded most valuable information, when taken in connection with other physical signs; it frequently elicited testimony of cardiac hypertrophy and myocardial

affections which it would have been difficult to obtain without its use. In those hearts which were within the government limits of acceptance and apparently normal, exaggerated pulse rate of perhaps 130, which followed immediately after exercise would gradually

TABLE 1.—CAUSES OF REJECTION

		Percentages
Mitral insufficiency		38.360
Mitral stenosis		16.875
Double mitral		11.350
Total		66.585
Aortic regurgitation	.613	
Aortic stenosis	.306	
Total		.919
Associated Conditions:		
Double mitral; aortic regurgitation; dilatation	.306	
Double mitral; cardiac hypertrophy	1.841	
Double mitral; cardiac hypertrophy; tachycardia	.306	
Double mitral; aortic regurgitation	1.226	
Double mitral; arteriosclerosis	.306	
Double mitral; tachycardia	.920	
Double mitral; chronic myocarditis	.306	
Double mitral; chronic myocarditis; tachycardia	.612	
Mitral stenosis; chronic myocarditis	.920	
Mitral stenosis; cardiac dilatation	.612	
Mitral stenosis; auricular fibrillation	.613	
Mitral insufficiency; tachycardia	3.684	
Mitral insufficiency; chronic myocarditis	4.298	
Mitral insufficiency; cardiac hypertrophy	5.217	
Mitral insufficiency; cardiac hypertrophy; tachycardia	975	
Mitral insufficiency; aortic regurgitation	3.672	
Mitral insufficiency; aortic regurgitation; tachycardia	.612	
Mitral insufficiency; cardiac dilatation; tachycardia	.306	
Mitral insufficiency; chronic myocarditis; tachycardia	.612	
Mitral insufficiency; aortic regurgitation; cardiac hypertrophy	.306	
Mitral insufficiency; auricular fibrillation	.306	
Aortic regurgitation; hypertrophy; chronic myocarditis	.306	
Aortic regurgitation; Flint murmur	1.226	
Arteriosclerosis; cardiac dilatation	.306	
Tachycardia; cardiac hypertrophy	.306	
Total		30.044
All other causes:		
Cardiac dilatation	.306	
Chronic myocarditis	.921	
Tachycardia	.613	
Arteriosclerosis; cardiosclerosis	.306	
Cardiac hypertrophy	.306	
Total		2.452
		100.000 100.000

decrease in rate in successive five second counts and would approximate 115 within fifteen seconds thereafter, being within twenty or twenty-five beats of normal when the first minute had elapsed; at the end of two minutes, pulse and respiratory rate were quite normal for the individual. But in those patients who presented other corroborative evidence of heart affections, the exercise test caused both pulse and respiratory rate to remain abnormally high at the end of two minutes. Had it not been for the exercise test developing a pulse deficit in three young men who apparently enjoyed excellent health, auricular fibrillation would not have been first recognized, to be subsequently proved by polygraphic studies.

Blood pressure estimates had a distinct value in determining rejection in early cases of aortic regurgitation. I chose to designate as "early" aortic regurgitant cases those patients who complained of precordial distress, who presented exaggerated breathing following sustained physical effort, who had a basal diastolic murmur indifferently transmitted along the right border of the heart, whose arteries were but slightly infiltrated, whose pulse, although quick, was not of the collapsing character described by Dominic Corrigan. Such early cases had not progressed to the degree of peripheral vascular relaxation which results in the Quincke capillary pulse, although it was interesting to note that dermographia was quite constantly present; the much sought for "pistol shot femoral" was not to be auscultated, nor was there clinical evidence of pronounced left ventricular preponderance. In such doubtful instances of aortic valvular disease, a comparison of the brachial and femoral systolic pressures, estimated when the patient was recumbent, showed a femoral increase of from 40 to 120 mm. of mercury, thus determining the rejection of the patient as physically disqualified for the service. The diastolic estimate was disproportionately low.

CAUSES FOR REJECTION

Comment on Table 1 might confine itself to the large percentage of mitral lesions found (66.58) and to the relatively small percentage (0.91) of aortic lesions detected. That these lesions were not incurred in the service is evidenced by the absence of any history of illness since being mustered in, thus establishing that the valvular defect existed prior to enlistment. Nor do I incline to the view that the intensive training of Army life had magnified a previously insignificant valvular defect; there were no histories of a gradual "limitation in the field of cardiac response" which would make this point of view tenable. Any one of several hypotheses may be held as to why these mitral lesions were not detected at the time of enlistment; when one considers the rapidity with which physical examination of recruits must be conducted, amid noisy surroundings and the shuffling of feet, with scant time for differential study and no time for a sifting of previous history, there is little justice in criticising the recruiting physician. Then, too, this official is naturally skeptical of the thrill, of the sharp apical "slap," of the accented mitral first sound and of the scarcely perceptible murmur of mitral stenosis; for he knows from long observation that any or all of these physical signs may be counterfeited by the overacting heart of excitement or of hysteria in the young. Such patients may require rest in bed and comfortable familiarity with their surroundings before a definite diagnosis is reached; at the base hospital at Augusta it was not unusual to supplement the appraisal of cardiac values in excitable youths by

TABLE 2.—PREVIOUS DISEASES

	Per Cent.
Abscesses	.15
Abscessed teeth	11.93
Angina pectoris	.30
Appendicitis	.46
"Bronchitis"	.15
Chickenpox	5.50
Chorea	.78
Digestive disturbances	.78
Diphtheria	9.75
Goiter	.15
Gonorrhea	10.53
Influenza	.30
Malaria	1.50
Measles	52.60
Meningitis	30.89
Mumps	1.68
Neuritis	1.83
"Pleurisy"	1.83
Pneumonia	13.60
"Quinsy"	1.68
"Rheumatism"	22.32
Scarlet fever	15.00
Smallpox	.30
Syphilis	1.33
Tonsilitis	35.93
Tuberculous glands	.15
Typhoid fever	11.62
Whooping cough	6.73

examining them when they were asleep and hence not susceptible to emotional disturbances.

The relatively small percentage of aortic lesions that were found might be explained by the fact that aortic valvular involvements are usually rapidly progressive in developing to a degree at which they are

accompanied by strong corroborative testimony of cardiac disease, and the recruit, as a consequence, is frankly sick at heart when he presents himself for enlistment and is promptly rejected.

CLINICAL COMPILATION

The average age of those examined was 23.59 years. Civil occupation was irrelevant as a causative factor in the conditions detected. Among military occupations, the Army cook seemed rather fated for dismissal from the service on account of heart disease. I was inclined to believe that these men chose cooking as a comparatively light occupation on account of being vaguely conscious that they could not "stand up" under the regular soldier's intensive gymnastics, drills and marches—a physical circumstance no doubt due to their as yet unsuspected cardiac lesions. Each patient was carefully questioned as to previous diseases; only one presented a history suggestive of circulatory failure. Precordial pain was surprisingly constant in the history of those who were subsequently rejected, being especially complained of as following continued exercise. Pain would thus seem to be a symptom of early cardiac disease, and should not be passed over without a thorough search for a heart lesion. Tenderness was present in less than 10 per cent. of those subsequently rejected, and when found was usually along the left border of the heart, being elicited by moderately heavy percussion.

The streptococcic group of diseases—tonsillitis, "rheumatism," "quinsy" and abscessed teeth—in Table 2 hold their usual high percentage place as provocative factors in subsequent endocardial change. No credence is to be given to the small venereal percentages herein recorded; Army regulations inflict such penalties on the soldier who is so unfortunate as to develop a specific urethritis or an initial lesion that the man in the ranks, rather than forfeit pay and a curtailment of his personal liberties, may naturally be expected to deny venereal infection either past, present or future.

Measles, in these figures, assumes a percentage importance far in excess of all the other acute, infectious, contagious diseases of childhood combined. The percentages are given in Table 3.

It would be reading entirely too much into these figures to assume from them that measles plays an important etiologic part in the endocardial changes of later life; it is, however, quite permissible to call attention to the earlier incidence of measles in over 52 per cent. of the patients later referred for evidences of cardiac disease. That this historically "harmless" disease of childhood may be a precursor of eventual heart damage suggests itself in a plausible light when one reflects that the complications and sequelae of measles, such as middle ear involvements, pulmonic invasions and chronic catarrhal conditions of the upper respiratory tract, are frequently suppurative in character and hence as fully capable of affecting the heart as are other septic processes within the economy. It remains for the pediatrician and for the family physician to determine, by frequent heart examinations during the course of and at stated periodic intervals subsequent to measles, whether or not a distant relation between measles and endocarditis, as cause and effect, shall find its way into our literature.

CLINICAL AVERAGES

I was struck by the large percentage (26.91) of thyroid enlargements in those who were examined for heart disease. This enlargement may have been a physiologic response of the thyroid gland to the demands that the hard and fast regulations of military life make on the nervous systems of those who have previously led a leisurely civilian existence; it may have been the result of frictional massage of the gland by the calisthenics and setting up exercises, which bring strongly into play the neck muscles of the soldier; or it may have been but an added touch of color to the clinical picture of heart disease. Whatever the cause, I am satisfied that it did not have the effect of increasing the pulse rate in the individual case, as one might at first thought suppose, from the averaged radial pulse rates, given in Table 4.

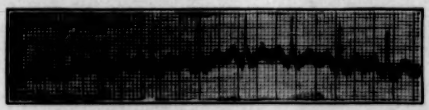
TABLE 3.—DISEASES OF CHILDHOOD

	Per Cent.
Measles	52.60
Chickenpox	5.50
Diphtheria	9.79
Scarlet fever	15.00
Whooping cough	6.73
Total all other diseases of childhood	37.02

EXPERIMENTAL STUDY OF THE "EXERCISE TEST" PRESCRIBED BY THE UNITED STATES GOVERNMENT FOR THE GUIDANCE OF SPECIAL CARDIOVASCULAR EXAMINERS

"The examination should include hopping 100 times on one foot, noting tachycardia and unusual dyspnea; after two minutes neither should be marked."

Electrocardiogram from an apparently normal heart before "hopping 100 times on one foot"; ventricular rate, 75; respiratory rate, 16 (Lead II, in this and following figures).



Curve from same heart immediately following 100 hops: ventricular rate, 120; respiratory, 30.

One minute later: ventricular rate, 105.

Two minutes later: ventricular rate, 75; respiratory, 16; both fallen to normal.

Eighty-eight per cent. of the men examined had pulse rates of 80 or more before exercise. The incidence of thyroid enlargement, mentioned in the preceding paragraph, had no bearing on the pulse rates when individually considered. Further, a studied

TABLE 4.—AVERAGED RADIAL PULSE RATES

Rate before exercise	97.86
Rate immediately after	128.57
Rate two minutes after	92.69

effort was made to have the patient feel at ease during the examination; we do not believe that the pulse rate was increased by excitement or emotion. A third logical supposition might be that the men were overworked and "going stale" through overtraining, and that this was the responsible factor in the increased pulse rate, but on inspecting the records there is no appreciable difference between the pulse averages of those organizations which were examined when training first began and those organizations examined after four months of Army life. Anti-tobacco purists, on account of the prevalence of the habit in the Army, might read into these figures a pernicious activity of the fragrant leaf reflected in the pulse; there is nothing in the records either to refute or substantiate their statements. My conclusion then, from these figures and from further observations in the service is that "the average pulse rate of 72 per minute" is not the pulse rate to be found in active youths between 20 and 30 years of age; the radial rate may be expected to be ten or more beats higher than the classical average of 72.

The maximum apical impulse was measured from a definite and constant position on the chest wall, the midsternal line. This line was chosen in preference to the "midclavicular" or "nipple" line, both of which may be subject to either structural or to postural change. It was but the work of a second to draw the line from the base of the suprasternal notch to the ensiform cartilage, using the blued end of a celluloid centimeter rule for the purpose. The apical impulse was found to be normally located 7.5 cm. from the midsternal line in the fifth interspace. Mitral stenosis brought the apical impulse 2 or 2.5 cm. closer to the midsternal line; mitral insufficiency naturally threw it 2 cm. or more farther to the left of the accepted standard.

The transverse diameter of superficial cardiac dulness, which I had considered in civil practice as being normally between 9 and 11 cm., was distinctly increased in soldiers. While it was fully recognized that cardiac percussion is notoriously subject to many inaccuracies, it was employed for the reason that it was quite as dependable as any facility at hand for determining cardiac enlargement, in the absence of the accurate information afforded by orthodiography. In this group of cases, collectively considered, the diameter of the heart averaged slightly over 13 cm., percussed with the patient erect. Nor did the position of the apical impulse in mitral stenosis follow out the rule of downward displacement with the constancy which many authors teach us to expect; the apical impulse was in the sixth interspace in 48.98 per cent. of the mitral stenotic cases, and in the fifth interspace in the remaining 52.02 per cent.

Fig. 1.—Smear made and stained by the simplified method. This smear and that given in Figure 2 were made from specimens examined with the dark field and reported negative, because no spirochetes could be found with the dark ground illuminator, after thorough search.

STAINING FOR THE SPIROCHAETA PALLIDA IN SMEAR PREPARATIONS

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Captain, M. R. C., U. S. Army; Chief of Laboratory, Base Hospital, Camp MacArthur
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The difficulties encountered in making a diagnosis of a suspected primary lesion are well known. The use of a dark ground illuminator is sufficient evidence that the proper staining of the *Spirochaeta pallida* by the various methods described in standard books on pathologic technic is not an easy task.

Thus, Mallory and Wright[1] give not less than four methods of staining, besides Burri's india ink method. Every one of the methods referred to is fairly difficult, making it impossible for men with no special laboratory training to obtain proper results. In fact, in this laboratory, employing Wright's method as described by Mallory and Wright, we have tried time and again to stain smears of cases in which numerous spirochetes were found with the dark ground illuminator, but with no success. Of course, that does not condemn the method; but it at least shows that it does not work in the hands of every one.

To obtain results with the dark ground illuminator, though easy at times, is as a rule a most difficult and time-consuming task. To spend a whole hour on an average case with the dark ground illuminator, searching for the spirochetes and then having to give up in disgust, is an experience familiar to any one who has used this method in a routine way. The desirability of having a specimen of such diagnostic import that will be a permanent specimen, one that can be filed away and referred to at any time in the future, similar to malaria specimens or tubercle bacillus smears, must be evident to any one. This point in itself would make the stained smears preferable to the dark field examination, provided the method of staining was sufficiently simple and would yield invariably good results. After trying out various modifications in staining, I

1. Mallory, F. B., and Wright, J. H.: Pathological Technique, Philadelphia, W. B. Saunders Company, 1915.

found a method that fulfils these two conditions. It is easy of application, and with it I have found spirochetes in smears that were negative when examined from the wet specimen with the dark field illuminator. The method is as follows:

The surface of the lesion is cleaned with a wad of sterile absorbent cotton, soaked in sterile saline solution, and all of the dried exudate is removed. The patient is then told to squeeze the lesion between the forefinger and the thumb until serous exudate appears. The appearance of the exudate may be hastened by scraping the deeper parts or the ragged edges of the lesion with a broken wooden applicator or with a stiff platinum wire. The exudate thus obtained from the deeper parts of the lesion should be mostly a serous exudate; real bleeding should be avoided. A good smear is one in which only an occasional red blood cell is found. The smears can be made on clean slides by placing a drop of deep exudate, obtained with a broken applicator, a sterile toothpick or a platinum loop, on one slide and spreading it out thinly with the other slide. The slides should be not pulled, but slid apart. The smears are then dried in the air, and stained with Wright's blood stain in the ordinary way, except that instead of plain distilled water to dilute the stain, 1 per cent. solution of sodium carbonate in distilled water is employed. The film is covered with Wright's blood stain, to fix the smear, a sufficient quantity being used, a little in excess of what is used in staining blood smears. At the end of from one to two minutes, to the staining fluid are added from 45 to 50 drops of 1 per cent. sodium carbonate solution in distilled water to a slide, or as much as the film will hold without running over. The diluted stain is allowed to remain on the film for fifteen or twenty minutes, and is gently steamed all the while with the flame of an alcohol lamp, as in the staining of sputum for tubercle bacilli by carbolfuchsin. The slide is then lightly washed with water, dried between filter paper, and examined with the oil immersion lens. The spirochetes appear intensely violet on a pale blue background, and are easily found.

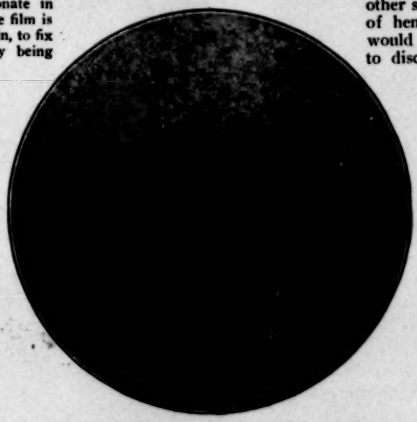

Fig. 2.—Another smear by the simplified method.

The advantage of this method is its simplicity; no special reagents or staining solutions are needed excepting 1 per cent. aqueous solution of sodium carbonate and Wright's blood stain. The results have certainly been most satisfactory.

Industrial Physicians and the Control of Cancer.—The American Society for the Control of Cancer in conducting propaganda has enlisted the aid of physicians and surgeons connected with large industrial plants throughout the country, who come in close contact with large bodies of men and women. An outline of a lecture on the control of cancer has been prepared by the council of the cancer society and the attention of these physicians has been called to it. Considerable interest has been manifested and many requests for the lectures have been received, as well as replies commending this form of educational work. In this connection the cancer commission of Harvard University has established a service for the free diagnosis of cancer which was inaugurated, October 1, 1917. It offers to the physicians of Massachusetts an opportunity for free examination of pathologic material removed at operation. This service was established on the suggestion of the American society.

PNEUMONIA AND EMPYEMA AT CAMP ZACHARY TAYLOR, KY.

A PRELIMINARY REPORT

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AND
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Since the opening of the base hospital in September, 1917, there have been admitted to the medical service 274 pneumonia patients, 176 with the lobar and ninety-eight with the bronchopneumonia type. This series of cases has been most interesting and unusual, differing in several aspects from the well recognized picture of lobar pneumonia and bronchopneumonia. This variance in the disease picture has occurred in periodic waves due to the severity and character of the disease, the relation to measles, the incidence of empyema and other serious sequelae, the presence of hemolytic streptococci, etc. It would seem profitable, therefore, to discuss these cases chronologically.

The early cases, in September and October, about thirty in number, apparently conformed to the usual picture of lobar pneumonia, with sudden onset, chill, temperature, rusty sputum, localized areas of consolidation, etc. Although type determinations of sputum could not be made, because of inadequate laboratory facilities in the early days of the hospital, these pneumonias undoubtedly belonged to the more benign type of organisms (Type IV), as only one death occurred in the series. This patient, who apparently had a mild case, developed a severe pneumococcic meningitis three days after a typical crisis, and died within twenty-four hours. Because of insufficient equipment and nursing personnel at the base hospital at this early period of its organization, these patients were cared for in the wards of the Louisville City Hospital. To this hospital much credit is due for efficient medical and nursing care.

The first case definitely diagnosed bronchopneumonia occurred, October 22, ten days after the first measles admission. From then on, the number of cases of pneumonia following measles increased rapidly, paralleling closely the measles admissions, latterly decreasing pari passu. In contrast to the early benign lobar pneumonias, these bronchopneumonias following measles were most severe and fulminant. Developing usually during the third or fourth day of the rash, the pneumonic process was ushered in by an increase in temperature, respiratory rate, patchy areas of dulness, roughened bronchovesicular breathing, moist bubbling râles and, of particular interest, marked dyspnea and dusky cyanosis of the face. The latter two symptoms,

interpreted as evidences of air hunger, increasing in severity with the progress of the pneumonitis, were most distressing and difficult to relieve. With fair degree of accuracy, one could often pick out the incipient pneumonias by noting the degree of cyanosis and blueness of the face, and by the same token could estimate the patient's chances of recovery.

From an epidemiologic standpoint, considerable interest attached to the time of the development of the pneumonia in relation to the period of hospitalization or discharge to quarters. Of a total of 102 cases of pneumonia following measles developing up to January 17, eighty-seven developed during the soldiers' stay in the hospital, while only fifteen were readmitted after discharge to quarters. In other words, the majority developed while in the hospital wards as close sequelae to the primary disease, either as contact or droplet infections from other patients, ward air or ward dust, or from the patient's own bacterial flora from mouth or nasopharynx, the minority developing after return to duty.[1]

At necropsy, the lungs of these patients contained scattered, small or large areas of bronchopneumonic consolidation, with often multiple peribronchial abscesses from which thick greenish gray pus could be expressed. Hemorrhagic and purulent tracheitis, bronchitis, bronchiolitis and bronchiectasis were usually present, while a markedly dilated right auricle served as evidence of antemortem cardiac failure.

About December 1, the fulminant atypical lobar pneumonias, later proved to be streptococcal in origin, began to appear and continued well past the middle of January. From the standpoint of the prodromes, these cases divide themselves into two classes: first, those starting insidiously with "sore throat," "cough," "grip," for a few days, progressing gradually until frank signs of consolidation could be elicited, and second, cases starting abruptly, severely, with sudden overwhelming prostration and collapse, profoundly toxic, progressing rapidly to death within three or four days, with symptoms so profound and acute as to suggest a general sepsis. These cases were most distressing. Because of the speed of development of the disease, and the evident urgency of the soldier's distress, little could be done to stay the progress of the disease, and one's utter helplessness in combating it

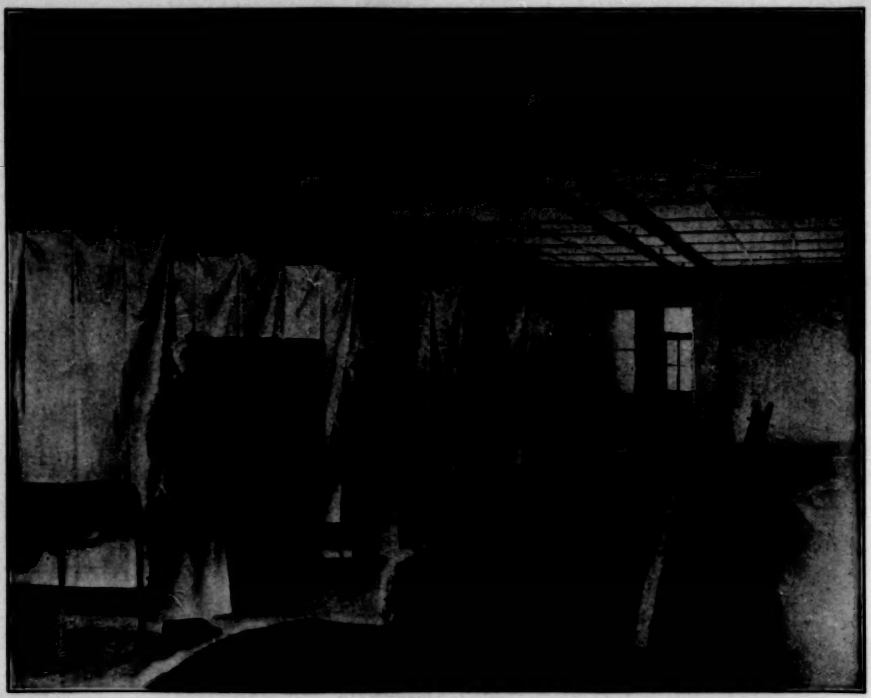

Fig. 1.—WARD IN BASE HOSPITAL, CAMP ZACHARY TAYLOR

This picture shows the cubicle method of isolation, method of heating and ventilating wards on ceiling, type of hospital bed, etc. Note face masks worn by nurses in attendance on cases of pneumonia.

1. The establishment of cubicle isolation, in compliance with orders from the office of the Surgeon-General, by hanging sheets on wires strung through the wards between each bed, was of material benefit in preventing the spread of pneumonia (Fig. 1).

was daily forced on us. Digitalis, caffein, venesection—nothing seemed to make the slightest impression.

In both of these groups of cases, empyema developed in an extremely high percentage, eighty-six cases in 274 pneumonias, an incidence of 31.4 per cent. In the four week period from December 17 to January 15, the empyema "epidemic" reached its height. Of 109 pneumonias, fifty-two developed pus in the pleural cavity, an incidence of almost 50 per cent.! This rise in the empyema cases, reaching its height Christmas week (fifteen out of eighteen lobar pneumonias developing empyema), was in marked contrast to the week of January 15 (of twenty-six pneumonias, only four empyemas). These variations in the empyema curve were quite separate and distinct from the pneumonic curve per se, and were probably due to the virulence (selective action?) of the invading organisms (hemolytic streptococci).

This series of eighty-six empyemas differed in several striking respects from the metapneumonic and parapneumonic empyemas usually seen. Many patients came into the receiving ward from the regiments with chests full of pus. In other cases, within an hour or two of admission to the wards, quantities of pus could be readily demonstrated. In both, a history of illness not to exceed twenty-four hours was often obtained. The extremely rapid development of the empyemas, often well within twenty-four hours, was demonstrated repeatedly by fluoroscopic and roentgenographic examination.

Fig. 2.—Brewer tube and attached water pump for continuous suction.

Physical signs were most misleading. Traube's space, displaced cardiac impulse, tubular breathing, and bronchophony giving little differential aid in doubtful cases. Dulness to flatness on percussion, particularly when associated with diminished breath sounds, were in most cases dependable. Intense loud tubular breathing, rasping in character, almost invariably meant fluid. This apparent paradox is probably explained by compression atelectasis, with ready transmission of bronchial sounds by the thick plural exudate.

Clinically, the severe prostration with flushed cheeks, hollow bright eyes, short grunting dyspnea, deep boring chest pain, and asymmetric chest excursion were most prominent. Later this severe pleural pain was relieved somewhat, owing probably to the separation of the inflamed surfaces by the developing exudate.

Many cases, diagnosed clinically massive lobar pneumonia, showed at necropsy widespread atelectasis with the lung compressed to half its normal size, but with little or no evidence of pneumonic consolidation. In these cases, purulent pericarditis was frequently associated, the pericardium containing a pint or more of thick, creamy pus.

Hemolytic streptococci were found in pure culture in a majority of the empyema fluids, fifty-two out of ninety-three examined, the remaining containing pneumococci or mixed organisms, or remaining sterile. The preponderance of streptococci was further emphasized by their presence in blood culture, pericardial pus, lung smears, and the heart's blood in these cases. Similar organisms were found widely distributed in various types of disease coming into the hospital at this time—almost universally in tonsil and throat smears, mastoid, middle ear and antrum pus, joints, abscesses, etc. The laboratory findings, together with complete absence of lung involvement in many instances, and the sudden overwhelming prostration and profound toxemia, with death in a few days, suggest that these so-called pneumonias are in fact true cases of streptococcic sepsis, with early localization in pleura and pericardium.[2]

Treatment has been disappointing. Of eighty-six patients with empyema, twenty have died, six have been discharged to duty, and sixty remain under treatment in the hospital. Rib resection has been ineffectual; no patient having this type of treatment left the hospital, while nine have died. Intercostal drainage with continuous suction from an attached water pump is being used at present with greatly improved results (Figs. 2 and 3). The routine of examination and handling of these patients at the present time is as follows:

1. Every patient showing bronchopneumonia and lobar pneumonia, severe sepsis, continued high temperature without demonstrable cause, severe continued dyspnea, particularly when accompanied by a sense of marked discomfort or pain on breathing, and a feeling of fulness or tightness in the chest shall be considered as having *potential* empyema, and shall be observed constantly with this possibility in view.

2. Each potential empyema patient shall be roentgenographed within forty-eight hours of admission, provided the patient's condition permits.

3. Each potential empyema patient shall be seen by the special empyema surgeon within forty-eight hours after admission, for consultation regarding exploratory thoracentesis.

4. A positive thoracentesis shall be followed immediately by the Potain treatment, as much fluid being withdrawn as is compatible with the patient's condition. A specimen of such fluid each time obtained shall be sent to the laboratory for examination.

5. In proved cases of empyema the patient shall be examined daily and roentgenographed, and tapped at least every third day. On the fluid's becoming opaque and of cream or purée consistency, the patient shall be transferred to the surgical service for continuous drainage with suction apparatus, unless ordered otherwise.

In explanation of the foregoing order, it should be emphasized that exploratory tapping and use of the

2. Jochmann (*Streptokokkensepsis*, Lehrbuch der Infektionskrankheiten, p. 137) calls attention to the fact that a streptococcus sepsis may progress with the picture of a lobar pneumonia in which the pneumonic process may be either the source of the sepsis or develop secondarily from it; and further, that the pleura may be the seat of a primary streptococcus empyema, later serving as the source of a streptococcus sepsis.

Potain treatment is not without danger. There have been several instances of collapse following both procedures in the several hundred times they have been used, in one case sudden death, probably due to suddenly lowered blood pressure (pleural vagosympathetic reflex [Capps and Lewis]). A number of other patients, although showing no ill effects at the time, have within twenty-four hours become markedly worse, with extremely low blood pressures, rapid thready pulse, drenching perspiration, pale clammy skin, either the result of the withdrawal of too large amounts of fluid, or the releasing into the circulation of overwhelming quantities of toxic substances. Recently the use of 0.5 per cent. cocain solution, anesthetizing down to and including the pleura, not moving the point of the needle around after pleural puncture, withdrawing the pus through the same syringe, and only a relatively small amount the first time, particularly if the fluid is clear, have resulted in no further mishaps.

SUMMARY

1. The bronchopneumonias and lobar pneumonias occurring at Camp Zachary Taylor, Ky., during the winter of 1917-1918, were most atypical, differing in mode of onset, clinical characteristics, incidence of empyema, presence of hemolytic streptococci, etc., from the usual picture of pneumonia.

Fig. 3.—Apparatus for continuous chest drainage in place.

2. Many cases diagnosed clinically lobar pneumonia showed at necropsy no evidence of pneumonic consolidation, but contained large amounts (3 liters [quarts] and more) of empyema pus and atelectatic lung tissue. Such cases may be considered examples of primary suppurative pleuritis.

3. The severity and rapidity of the onset, course and termination of many cases, the overwhelming prostration and toxemia with death measured in hours, the presence of hemolytic streptococci in empyema pus, blood cultures, metastatic abscesses in joints, cellular tissues, pericardium, middle ear, mastoid, meninges and brain, and the inefficacy of treatment all lend strong support to the view that these cases are true examples of streptococcus sepsis.

4. The empyemas of this series are notable from the standpoint of their incidence (31.4 per cent.); their early development, often primary; their rapid development within twenty-four hours; the presence of hemolytic streptococci; their occurrence as part of a general sepsis (distinct from pneumonia); the difficulties of interpretation of physical signs; the advantages of roentgenographic examination, and the difficulties and indications of various forms of treatment.

5. The character of the empyema fluid gradually changes, becoming progressively more turbid and heavier. The greatest benefit from surgical interference is obtained by delaying operation until the fluid becomes opaque, greenish gray and of cream or purée consistency. Operations instituted earlier or later are of less benefit. The use of intercostal drainage with attached water pump for continuous suction has been superior to other forms of surgical treatment. This method imposes a minimum of surgical trauma; prevents the aspiration of foreign material (secondary infection) and collapse of the lung from pneumothorax; allows the pus to escape gradually; maintains negative intrapleural pressure, and shortens the patient's period of invalidism.

GUNSHOT WOUNDS OF THE KNEE JOINT

CASUALTY CLEARING STATION AND BASE HOSPITAL OBSERVATIONS ON EIGHTY-FIVE CONSECUTIVE INSTANCES, WITH A NEW METHOD OF DRAINING THE KNEE JOINT

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FRANCE

In 1916, in the service of the British expeditionary forces, France, there was much discussion among the medical officers regarding the best method of active care of these serious injuries. On the whole, there was a tendency to collate the different treatments and to watch for final results. In the late part of the year, a course of action crystallized out of this chaos. During 1916 at the general hospitals, victims of battle casualties were frequently received fresh from the trenches, when only slight operative interference had taken place. This was especially true of gunshot wounds of the knee. A perusal of the tabulation made at that time to cover these patients now seems unsatisfactory, although any desired line of procedure in treatment was then possible for the relatively untouched wounds. Sepsis predominated. Mortality was high, and nearly one half of these cases went on to high amputation. Now, a more or less uniform method of first treatment is in vogue at casualty clearing stations, which are more numerous than before and better equipped for the demands of the delicate surgical technic required for this type of wound.

The subject of gunshot wounds of the knee is so large that it merits division. The general opinions here expressed are the result of careful tabulation and study. It is desirable to consider these casualties on the assumption that the wounded are handled surgically within a short time after their injury. The question of the drainage of septic knee joints alone is large, deserving deep study. It will be mentioned here only in relation to the treatment of some patients of this series, and to suggest a newer method.

Individual records of each patient coming into the service were made for my personal use, observations in many instances extending over several months. A

tabulation of eighty-five consecutive patients was prepared according to the following outline, and the figures given are based on a study of the table.

OUTLINE FOR STUDY OF GUNSHOT WOUNDS OF KNEE JOINT

1. Type and location of wound related to a transverse line through patella:
   (a) Was there exit and entrance?
   (b) Was synovial surface alone involved?
   (c) Was there fracture accompanying? Which bones?
   (d) Was foreign body present? In joint? In bone?
   (e) Was joint traversed by foreign body?
2. Type of first treatment:
   (a) Where given? Field ambulance? Casualty clearing station? Base hospital?
   (b) Was the joint opened by missile or by operation?
   (c) Was the joint irrigated?
   (d) Was joint "bipped"?
   (e) Was foreign body removed? Or bone fragments?
   (f) Was joint closed by sutures?
   (g) Was joint left open?
   (h) Was joint drained by foreign material, e. g., gauze, gutta percha, tube?
3. Were splint and extension used?
4. General data:
   (a) Condition of patient on admission.
   (b) Joint pain, swelling, redness, discharge (pus or synovial fluid).
   (c) Temperature curve.
   (d) Cultures made. Results.
   (e) Was joint aspirated? Drained?
   (f) Other secondary operations.
   (g) Condition on discharge from hospital.
   (h) Probable prognosis.

GENERAL PROCEDURE IN ROUEN DISTRICT

There are several important reports on this type of wound. The most interesting general collection of knee injuries was made by Barling[1] in the Rouen hospital district, from June to December, 1916. It is, of course, understood that any final record of these patients is impossible because wounds and a large part of their treatment occur in one country, while subsequent care and the final disposition of the patient take place in another, in scattered hospitals. Like every other man who studies these gunshot wounds, Barling discovered that the statistics clearly reveal a high proportion of patients whose wounds required early excision, removal of the damaged bone and any retained foreign body, joint irrigation, and closure by suture, and later followed a course of satisfactory healing which required no further surgical interference. The findings in 845 knee joints operated on in the Rouen district are presented in Table 1.

TABLE 1.—RESULTS OF EIGHT HUNDRED AND FORTY-FIVE OPERATIONS ON THE KNEE JOINT

Classification of Wounds	No. of Cases	Percentages
1. Total number cases of injury to knee operated on	845	....
2. With bone injury	438	....
3. Without bone injury	407	....
4. Wound excised and closed	322	....
5. Cases under (4) requiring further operation*	82	25.5
6. Wound excised and packed	336	....
7. Cases under (6) requiring further operation*	128	38.4
8. Excision of knee	42	....
9. Arthrectomy, partial or complete	15	....
10. Excisions or arthrectomies amputated	13	22.8
11. Deaths after excision or arthrectomy	13	22.8
12. Amputation without excision	151	....
13. Deaths under Class 12	49	32.4
14. Total amputations	164	19.4
15. Total mortality	72	8.5

*One hospital with a large number of cases was unable to separate the cases under items 4 and 6.

SUMMARY OF RESULTS IN EIGHTY-FIVE CASES

In our present series of eighty-five patients, the synovial lining of the joint was opened by the missile in every instance. There were two deaths. In both cases the patients suffered bone injuries at the knee, and one died from a gas infection of his arm, which was amputated, the knee apparently doing nicely. In reality, then, there was only one death caused by the knee injury, due to generalized sepsis, since no secondary operation was performed.

The synovial surface alone was involved in forty-two instances, in three of which, or 7 per cent., amputations were made. There were bone injuries accompanying forty-three knee wounds, in six of which, or 14 per cent., amputations were made. We might suppose, then, that a knee gunshot wound which causes simultaneous bone injury is twice as liable to go on to amputation as one without bone injury. Clinically, there seems to be a higher ratio. In twenty-five patients, foreign bodies were present in the joint, in eighteen patients they were present in the bone.

The amputations numbered nine, or approximately 10 per cent., though Barling figures 20 per cent. Six of these had complicating bone injury. The foreign body was removed in seven. The wounds of six of

Fig. 1.—Drainage tube inserted in upper margin of subcrural pouch.

the nine patients were excised early at casualty clearing stations or field ambulances. One was excised late at the base and two were never operated on. In addition to these nine, there were three patients who may possibly have gone on to amputation later in England. There is no record of them after leaving the base hospital. They were under observation a long time and were finally sent away during a rush of the wounded needing beds.

Looking at the figures from another standpoint, we find that sixty-six of the eighty-five patients suffered penetrating shots, with no wounds of exit. The results are as set forth in Table 2.

TABLE 2.—RESULTS OF TREATMENT OF SIXTY-SIX PATIENTS

	No. Patients	Percentages
Death	1	....
Loss of limb	8	12
Fair result (meaning stiff knee or markedly impaired function, but the leg saved)	11	16.5
Good result (a movable knee promising a high degree of function)	27	40
Excellent result (with hope of nearly normal function)	19	29

The through and through perforating shots (wounds of exit and entrance) were found in nineteen instances. The results were as follows: one case of death from gas infection of the arm; one case of loss

1. Barling, H. G.: Brit. Med. Jour., 1917, 2, 277.

of limb or 5 per cent.; two, or 10 per cent., in which the results were fair; ten, or 50 per cent., in which the results were good, and five, or 25 per cent., in which the results were excellent.

We might believe, then, that the result depends not so much on whether a wound is penetrating or through and through as it does on other factors, namely, early surgical excision and the presence or absence of concomitant bone injury.

Taking the early treatment into consideration, we find that in eighty-five instances, sixty-five were treated as early as possible by wound excision and joint closure, leading to fifty-five fair to excellent results. Of the sixty-five patients in whom early excisions were made, thirty-eight had bone complications, six suffered amputations and two died.

Tracing them further from the standpoint of secondary surgery, we find that forty-seven wounds healed cleanly, demanding no surgical interference; four demanded secondary aspiration, all of them giving good results, and thirteen demanded secondary operation, six of them being the amputations mentioned in the foregoing.

The general results of the series of eighty-five were excellent in twenty-five instances; good in thirty-six, fair in thirteen; loss of limb in nine, and death in two.

GENERAL DIRECTIONS

In the light of results of recent experience, after a knee joint injury, the soldier should be splinted at the first dressing post and not be allowed to walk on the leg. All operations should be done at the casualty clearing stations, within twenty-four hours after the wound is received, when possible, or better yet, within eight hours. During pushes, this arrangement is not possible, as a selection of patients for the base hospital must be made. Under such severe battle circumstances, the following types of knee injury may be evacuated at once.

Fig. 2.—Prone position with suberural drainage. When turned, the Thomas splint is easily supported by the same ropes.

1. Wounds which show no inflammation, are quiescent, and lack pain.
2. Small clean wounds of entrance and exit, or entrance alone, probably caused by rifle bullet.
3. Wounds with no serious bone or blood vessel complications.
4. Wounds in which foreign bodies are not evident and the joint is not painfully distended.

Wounds of the posterior aspect of the knee are more favorable for transportation, since they drain out by gravity. On the anterior aspect, they may drain into the joint during the journey. The Thomas splint, with extension and flannel bandages from toe to thigh, should be used.

Types of knee injury to be retained at the casualty clearing station are:

1. Those complicated by serious bone or blood vessel injury.
2. Distended painful joint, or early signs of septic inflammation.
3. Foreign body visible or palpable after it has opened joint.
4. Large superficial wound generally caused by shell fire, opening into the joint. Sepsis is certain to spread into the joint and immediate operation is wanted.

Early operative treatment is either radical or conservative. Radical treatment calls for either amputation or resection.

Amputation is advised if severe blood vessel injury exists, or even a large hematoma with probable infection in the popliteal space; if severely comminuted fractures into the joint exist; if gas infections of the periarticular tissues are present, or if sepsis has already set in, and the patient is in a poor general condition. Resection is advised if a comminuted fracture leaves little normal joint surface. Most of these fractures result later in amputations. Only those that are resected very early do well.

Conservative treatment is reserved for the penetrating and through and through wounds, even in the presence of fractures not sufficiently extensive to indicate resection or amputation. If the patella is shattered, it is removed, its periosteum is spared, and the synovial membrane is closed, if possible. If the presence of a foreign body is even suspected, the patient should not be operated on until there are roentgenograms in both lateral and anteroposterior planes.

OPERATIVE TECHNIC

Every knee joint gunshot wound should be operated on if time and circumstances permit. The most innocent appearing may lead to serious trouble. The successive steps are as follows:

1. First come careful skin shaving and disinfection. The leg should be held up off the table by an overhead swing.
2. The track of the missile is completely, carefully and slowly excised with a sharp scalpel, but no scissors. The sliding of the tissues over each other is avoided and the contused edges are removed in one piece. Sufficient skin opening is made to permit access to the foreign body or the joint surface. Fresh towels and instruments are then displayed. No fingers or instruments are inserted through the solid wound into the joint, since not only may infection be carried in, but the foreign body may be pushed into an inaccessible area. The comminuted bone and foreign bodies are removed. The synovial surface should not be sponged, or irritated or exposed for any longer time than necessary. It matters little about the length of the skin incision, but the amount of skin removed should be sparing to avoid undue tension in the

closure. Skin plastics may be performed. If the foreign body is buried in bone, it is removed, and with it the surrounding damaged bone.

3. The joint may be irrigated with physiologic sodium chlorid solution. Various operators use ether, flavine, proflavine or eusol. As far as I can tell, the solution used makes little difference. Mechanical cleansing without joint trauma is desired.

4. The wound is closed in layers. The synovia is closed by stitching, to bring only smooth surfaces in contact, and the skin and superficial tissues are closed snugly unless there is great edema and contusion. In that case, a small drain may be put down to the closed synovial surface, not into the joint. If the synovia cannot be closed, a gauze pack is placed down to its surface. Injection of formaldehyd solution, glycerin, ether or other irritants into the closed joint is of doubtful value.

5. A Buck's extension is attached to a Thomas splint on the leg, and flannel bandages cover all. For comfort and steadiness, the application of the splint should be exact, requiring skilled attention. Most patients should be retained from twenty-four to forty-eight hours before transportation. Dressings and splints are not disturbed unless there is pain, fever or looseness.

Each operation takes from forty minutes to two hours. When aseptic healing is in progress and the joint is not painful, slight passive motions may be started, the second week. Should the joint become distended, should temperature rise and sepsis seem to be starting, an aspiration may be performed to decide the character of the intra-articular fluid and to obtain a culture. Staphylococcus infection is less to be feared than streptococcus. With rest, it may even subside after aspiration. Objections to aspiration are found in the wounding of the synovial surface and leakage of the infected joint contents through the puncture hole into poorly resisting periarticular tissues, resulting in a rapidly spreading sepsis. The joint surface has as much resistance as, if not more than, the periarticular tissues.

Why should these wounds be excised, the synovial edge trimmed and the joint irrigated, after the foreign bone fragments are removed? Because, without a doubt, the synovial surface is almost as able to take care of itself as the peritoneum, if given a chance, and the resistance of the joint surface is greater than we have been led to believe. After trimming and irrigating, the operator closes the joint snugly, and its own resistance will often do the rest. If the joint is not so treated, and if it opens into the unexcised tract of a missile which becomes septic, it is ultimately contaminated by the extension of the infection. This fact can be proved by many clinical observations, the joint infection coming on late after the wound infection has developed and seeped into the articular surface. This is what happened to most of the septic joints in the early part of the war. If infection arises extra-articularly from the closing of the joint after wound excision, it is recognized and the joint is drained, and thereby saved. We employ this principle constantly in operations in fractures of the patella. Splinting prevents motion, and hence favors an early healing of the sutured synovia. It also saves the patient from pain and loss of sleep — two important factors, if sepsis supervenes.

One has only to follow these patients from clearing station to base hospital to be convinced of the value of this treatment, even if gross statistics did not confirm it fully.

TREATMENT OF SEPTIC JOINT

When septic joint threatens to follow conservative treatment, or no operative treatment at all, what shall be done? Gray,[2] and Rankin[3] advise early radical incision and drainage. I am inclined to side with Page,[4] who says that no classical drainage of the knee joint is satisfactory and that joint excision after infection is valueless. Early amputation is advisable. Amputation must be looked on as a means of saving life. Long courses of joint sepsis, despite radical drainage, give too high a mortality. Early amputation gives a lower mortality and a satisfied living patient. Not that every septic knee should be amputated, but it is probably true that more should be so treated. The joints are drained repeatedly until the patient's resistance and vitality are so low that late amputation results in death or generalized sepsis. A drained joint may result in a useless leg which must be removed within a year.

In July and August, 1917, I began to drain these septic knees very early through the upper part of the subcrural pouch. A small rubber tube was introduced into the joint just after aspiration and the making of a confirmatory culture. Remarkable relief followed the small incision and drainage. Some patients went on to recovery, but others had to endure more extensive drainage or amputation. It was finally decided to drain them thus very soon after cultural proof of intra-articular infection has been obtained, and then, with the leg firmly held in a Thomas splint, to turn the patient over on his face in order to let the joint exudate run out of the small opening, which in this way has become the most dependent point of the joint. The entire joint surface, even down between the bones and the crucial ligaments, was thus drained. When the patient is in dorsal decubitus, it is difficult to drain the knee joint completely, on account of its topography. Lateral incisions must be made very low down and must be sufficiently extensive to drain both the subcrural area and the real joint surface. No knee joint that I have dissected has failed to show full and open connection between the articular surface and the subcrural pouch. Localized infections of the knee joint are almost impossible. Many times in necropsies on these amputated legs, fresh fibrinous or even fibrous adhesions walling off pockets have been found, but the whole joint was also infected. Lateral plus transverse incisions, through the lateral ligaments at the joint level as far down as is safe in order to avoid important structures, will still leave a pocket for the accumulation of pus, but may save a joint. Some joints among this series of patients were saved by this precaution. The crucial ligament should be cut across at the same time, if a stiff knee is anticipated.

For the first stage of knee joint infections, however, even for those that threaten to become severe, subcrural drainage and inversion treatment are suggested. I was ordered to a casualty clearing station in August, and a serious trial of this treatment was interrupted until my return to the base hospital in October. In that month, Mayo-Robson[5] also advised the use of this method, but did not state whether he had attempted it. At that time, there were three patients under treatment for knee joint infection in one of my wards.

2. Gray, H. M. W.: Brit. Med. Jour., 1917, 2, 278.
3. Rankin, W.: Brit. Med. Jour., 1917, 2, 287.
4. Page, C. M.: Brit. Med. Jour., 1917, 2, 282.
5. Mayo-Robson, A. W.: Brit. Med. Jour., 1917, 2, 450.

SUBCRURAL POUCH DRAINAGE AND INVERSION TREATMENT

The joint is proved septic, and should be taken at the earliest stage. Under anesthesia, an opening 1 inch long is made in the midline of the thigh at the upper margin of the pouch. The quadriceps extensor muscle fibers are separated longitudinally by a pair of Mayo scissors, and the joint synovial surface is carefully opened through its upper reflection only. The lower synovial wall should not be damaged. A medium-sized rubber tube extending just into the joint is sewed into place (Fig. 1). The incision around the tube is left wide open to permit the secretion to run out, instead of backing into the thigh tissues. A Thomas splint and extension are applied, the leg being supported by cross pieces of perforated metal both anteriorly and posteriorly, and being thoroughly padded and so bandaged that the portion over the wound can be removed for dressing without loosening the splint. The patient is then put to bed, a Balkan frame is rigged over him, and for a couple of hours night and morning, he is turned over on his face (Fig. 2). Later these periods are extended until he can lie thus for hours at a time.

If the tube clogs with pus and débris, it can be mechanically washed out with physiologic sodium chlorid solution or eusol until it is freely open. The joint may thus be partly irrigated, if desired. When the discharge becomes serous, pus ceases and temperature falls, the tube is removed and the small wound is allowed to heal, the joint being safely started on its own resistance looking toward recovery. The splint is, of course, retained until the joint is quiet and painless.

Six patients have been treated by this method of drainage and inversion and observed for a long period. In four cases the results were very good, one patient recovering from a gas infection of the joint. One had a doubtful outcome and one required amputation. There seems to be a distinct field for this type of treatment, which necessitates comparatively few operations on patients who would otherwise be subjected to extensive drainage, incisions and prolonged suppuration.

Patients so treated should be in the early stage of joint infection, before erosion of the cartilage has taken place and before the infected contents of the joint have mechanically burst or pathologically necrosed through the synovial surface to set up a suppurative periarthritis. This early attention is all-important. If the infection is retained within the joint surface, the synovia, with the help of sensible gravity drainage for its exudate, will rise nobly to do battle. If the periarticular surfaces are also seriously invaded by the pyogenic infection, we cannot expect joint drainage alone to produce a subsidence. It is important, therefore, to follow a technic as described. The operative opening into the joint must not open an avenue for infection into the thigh. In one instance, a secondary and, fortunately, a superficial thigh abscess had to be evacuated after the joint had quieted down. Drainage tubes must be given careful attention, the character of the discharge must be noted, and the tube removed as early as consistent. A bacteriologic control of the joint discharge might aid. A snug splint will not allow knee motion. The patients need encouragement and even anodynes when they are first turned over, but they are soon willing to help turn themselves, understanding that a special effort is being made to save them from more serious operation or amputation.

A vertical position of the limb at right angles to the body in the Thomas splint also places the subcrural pouch in a dependent position, but the drainage is not absolute as in the prone position, and there is more tendency for progressive infection of the thigh tissues.

RULES FOR TREATMENT OF WAR WOUNDS

The following principles governing treatment of war wounds of the joints were adopted at the Inter-allied Surgical Conference, in March and May, 1917. They corroborate some of the facts set forth in this article.

1. At the dressing station, wounds of the joints should be immobilized with great care, in an appropriate apparatus.

2. At the clearing station, all injured joints in which the wound is extensive, the joint tissues are lacerated, or the missile is retained, and especially when a fracture is present, should be operated on, if possible, during the first six or eight hours after the patient's arrival. The French surgeons extend this rule to all cases, except certain bullet wounds with a punctiform orifice and without fracture.

3. Roentgenoscopy is indispensable in every case.

4. The operation should include a wide aseptic arthrotomy with excision of the tract, a complete exploration of the joint, a systematic removal of foreign bodies and splinters, and a cleaning and curetting of the lesion in the bone. This should be followed either by complete closure, or by closure of the capsule with superficial drainage. A compressing dressing should be applied.

5. Resection, typical or atypical, should be practiced only when there is considerable damage to the bone. In the knee, the operation should be primary, whereas in the elbow and shoulder a secondary operation is preferable.

6. In severe suppurative arthritis, the first measure should be a wide arthrotomy with complete immobilization and progressive disinfection of the wound. If this treatment fails, then resection should be practiced, with separation of the articular surfaces by extension. In very grave cases immediate resection is required.

REPORT OF A PATIENT ON INVERSION TREATMENT

Patient 56 in series, a driver R. J. O., 1722, A. F. A., Forty-Third Battery, sustained a shell wound of the left knee. The usual excision treatment was performed at the casualty clearing station, and two days later he was admitted to General Hospital No. 18. The following day his temperature rose to 102.2 F. The knee was painful, and aspiration of the joint revealed a cloudy sanguineous fluid which on culture showed the staphylococcus. The next day's notes said: "The knee joint area as a whole is slightly swollen, edematous and distended. Subcrural pouch not tender to pressure. On the inner side of the joint over the head of the tibia is a slightly ragged wound (stitches removed) discharging pus. This does not seem deep, and the puffiness around the anterior knee tissues extends to the tibial tubercle. The joint was closed off by the primary operation, but while undoubtedly involved (the culture showed organisms) the ultra-articular infection does not appear virulent. Temperature, 100.4. It is possible that the condition is an osteomyelitis of the tibial head as the roentgen ray shows a grazing damage of the bone. A natural reaction within the knee may save it. Skin wound opened widely and hot dressings applied."

Two days later it was necessary to drain the joint, the subcrural pouch was opened, and the patient was put on inversion treatment. After six weeks, the notes said: "Temperature about normal for past thirty days. Slight swelling about the knee, and the wound is practically closed. The patient's general condition is very good, the joint is quiescent and will probably be stiff." Evacuated to England."

Special Article

SYNTHETIC DRUGS III*

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CHICAGO

Since the publication of the last article in this series, information supplementary to that given previously has been received as follows:

Neo-Arsphenamin.—An importing license has been granted by the Federal Trade Commission to the Diarsenol Company, Inc., 475 Elicott Square, Buffalo, for the Canadian brand of neo-arsphenamin, Neodiarsenol. Licenses for neo-arsphenamin have also been issued to the Takamine Laboratories, New York; Farbwerke-Hoechst Company, New York, and Dermatological Research Laboratories, Philadelphia. The price has not been fixed at yet, but the understanding is that the market price will be about $2.25 per 0.6 gm. ampule.

Holocaine Hydrochloride (see Article II, p. 689).—This may be obtained from the Farbwerke-Hoechst Company, 111 Hudson Street, New York, which still has supplies of the German-made article at the price of 50 cents and 45 cents per gram in containers of 1 and 5 gm., respectively. As the drug may be easily prepared from acetphenetidin, the manufacture of the product in this country with a view to its sale at a lower price is being encouraged.

Barbital-sodium, introduced as veronal-sodium (see Article I, p. 537), has been submitted by the Abbott Laboratories, Ravenswood, Chicago, under their license to manufacture barbital, and is being examined by the chemical laboratory of the American Medical Association.

THE STATUS OF SYNTHETIC AND RELATED DRUGS CONSIDERED ESSENTIAL (CONCLUDED)

6. *Cardiac Stimulants.*—Caffein and its combinations with sodium benzoate, citric acid, etc., is available from a number of American firms. No shortage has been reported.

Ouabain (G-Strophanthin-Thoms; crystallized strophanthin) is being supplied in ampules by Hynson, Westcott and Dunning, Baltimore, who are enjoying the counsel of Prof. R. A. Hatcher of the Cornell University Medical School in controlling the purity and the keeping quality of their preparation. Merck & Company report their stock as exhausted and not likely to be replenished in the immediate future. The committee has been endeavoring to interest another large manufacturing house in this drug because it is not considered in the interest of the public welfare that the country should be dependent on any single source of supply in the case of any essential drug, any source of supply being exposed to destruction by fire or other calamity.

In those few cases in which the drug digitalis or its galenic preparations cannot be used, digipuratum and digitoxin are available in good quantities from Merck & Company, 45 Park Place, New York, and digipoten from the Abbott Laboratories.

Attention is called here to the report on the therapeutic use of digitalis preparations by Dr. R. A. Hatcher,[1] which was written at the request of this committee to help meet the present emergency situation.

7. *Local Antiseptics.*—Of the various preparations containing colloidal silver or silver in combination with a protein, quite a number are normally manufactured in this country, and physicians should have no difficulty in securing supplies. Thus silver protein, Squibb (E. R. Squibb & Son, New York), Argyrol, a silver vitellin (manufactured by the A. C. Barnes Company, Philadelphia), Novargan, a silver proteinate, and Collargol, a colloidal silver preparation (both manufactured by the Heyden Chemical Works, Garfield, N. J.), Protargol, a silver proteinate (manufactured by the Bayer Company, Inc., New York,), and Cargentos, a colloidal silver oxid (prepared by the H. K. Mulford Company, Philadelphia) may be mentioned in this class.

The various antiseptics based on the work of Dr. Dakin and Dr. Carrel are now manufactured in this country. The preparations of the Calco Chemical Company, Bound Brook, N. J., the Monsanto Chemical Company, St. Louis, and of the Abbott Laboratories, Ravenswood, Chicago, have been accepted as of standard strength by the Council on Pharmacy and Chemistry. New and Nonofficial Remedies, 1918, contains standards for these products.

8. *Varied.*—There has been considerable inquiry for guaiacol preparations. The Lyster Chemical Company, 61 Broadway, New York, is said to be making a specialty of these preparations. The manufacture of these products as well as of the derivatives of creosote has been recommended to a number of firms.

The supplies of the important *mydriatic* euphthalmine (see New and Nonofficial Remedies, 1918, p. 55) are reported as exhausted, and the former agents of the German preparation, Schering and Glatz, have stated that they do not contemplate manufacturing the product. As this drug is used only in small quantities, too small apparently to interest commercial houses, arrangements are being made to have it manufactured in a university laboratory under license of the Federal Trade Commission.

The manufacture of salophen is being studied by the Antoine Chiris Company, New York, and in the chemical laboratory of the University of Chicago work on the process is being carried out with the view of insuring better yields in its manufacture.

Physicians interested in products which they may consider essential and which have not been referred to in this series of articles, and physicians who have reason to believe that extortion is being practiced in the charges for any synthetic drug, are urged to communicate with the author, whose committee will be glad to give the reports careful consideration.

6. A letter from the patient states that he is gradually acquiring the use of the joint.

* The information conveyed in these articles is based on the latest reports to the writer; it is probably not complete as to all details, but is published now to avoid further delay in bringing the main facts before the medical profession. The writer will be glad to receive information to be used later according to his best judgment.

1. Hatcher, R. A.: Digitalis Therapy and the Present Shortage in Drugs, THE JOURNAL A. M. A., Nov. 3, 1917, p. 1524.

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RESPIRATION AND THE CARBON DIOXID CAPACITY OF THE BLOOD

The more recent study of what is commonly termed acidosis has shown that the underlying phenomena that may be postulated to explain it are far more diverse and complex than was formerly assumed. The original conception was primarily concerned with the excessive production of acid in some form or other in the body. Subsequent investigations have made it clear that the organism has an unexpectedly large capacity for maintaining its neutrality, despite the appearance of unusual quantities of acid. This forms one of the conspicuous factors of safety. One acid factor is constantly present in the form of the continually produced carbon dioxid. It is carried away from the cells in the tissue fluids and blood in solution as sodium bicarbonate, and the excess can be promptly eliminated through the process of breathing, thanks to the usual responsiveness of the respiratory center to even the slightest increment in acidity in the circulation. Acids other than carbonic displace the carbon dioxid from the blood, so that the total acid factor present is scarcely altered from the standpoint of hydrogen ion concentration. Owing to this regulatory mechanism, it is practically impossible to detect any undue production or accumulation of acids in the blood by estimating its reaction; for the balance of acids and alkalis is kept essentially unaltered until very extreme conditions arise. These facts have often been emphasized in THE JOURNAL.

When other acids displace part of the carbonic acid of the blood, the carbon dioxid tension of the blood decreases; and since the carbon dioxid tension of the alveolar air varies directly with that of the arterial blood, it has been customary to estimate this respiratory factor as a measure of acidosis. Lately, however, attention has been centered even more on the altered capacity of the blood plasma to bind carbon dioxid when acid production is increased in the body. If the available bases neutralize other acids, they cannot combine with their usual quota of carbonic acid. D. D. Van Slyke, in particular, has emphasized the importance of measuring the carbon dioxid combining capacity or the "alkali reserve" of the blood as an index of acidosis more reliable than the estimation of the content of carbon dioxid in the alveolar air.

Yandell Henderson[1] and his collaborators have pointed out that alterations in respiration introduce still further complicating factors into the problem of estimating the existence of acidosis. It is shown by them that when in an otherwise normal organism respiration is stimulated to excessive vigor by pain, or by a drug like ether (or probably by any condition that lowers the threshold and increases the sensitivity of the respiratory center), the blowing off of carbon dioxid produces a reduction in the carbon dioxid content of the blood. This condition very soon leads to (and in respect to p_H is probably in part compensated by) a reduction also in the carbon dioxid capacity (alkali reserve) of the blood. Apparently alkali passes out of the blood into the tissues. Thus the acid-base equilibrium, or carbon dioxid alkali balance, of the blood is restored at a level much below normal, and a condition simulating true acidosis, but in certain respects markedly distinct from it, results. The feature to be emphasized is that the content of not only the carbonic acid but also the sodium carbonate remains low. Henderson believes that, unlike a true acidosis, the total alkali in the body remains, so far as we can judge, unaltered; it is merely abnormally distributed. A reversed condition is brought about by diminished breathing. When the respiratory center is depressed, as by morphin, says Henderson, or when, by the administration of high concentrations of carbon dioxid in the air breathed, the alveolar carbon dioxid is raised, the carbon dioxid content of the blood is also raised. This causes (and in respect to the p_H of the blood is probably compensated by) an increase in the carbon dioxid capacity or "alkali reserve" of the blood, due apparently to the passage of alkali from the tissues into the blood. Thus a pseudo-alkalosis or, if one thinks only in terms of p_H, a carbon dioxid acidosis, is produced. Here both the carbon dioxid and the sodium carbonate in the blood are above normal. Probably, we are further told, the total alkali in the body is unaltered and is merely redistributed.

The views just outlined place primary emphasis on alterations in breathing rather than on metabolic changes as the starting point of alterations in the carbon dioxid carrying capacity of the blood. Henderson and Haggard,[1] working at the Yale Medical School, have tested their hypotheses in relation to the known phenomena of ether anesthesia. According to them the disturbance of the carbon dioxid capacity of the blood by ether appears from these experiments to be wholly dependent on disturbance of respiration. If

1. Henderson, Yandell, and Haggard, H. W.: Respiratory Regulation of the Carbon Dioxid Capacity of the Blood, I, High Levels of Carbon Dioxid and Alkali, Jour. Biol. Chem., 1918, **33**, 333; II, Low Levels of Carbon Dioxid and Alkali Induced by Ether: Their Prevention and Reversal, ibid., p. 345; III, The Effects of Excessive Pulmonary Ventilation, ibid., p. 355; IV, The Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity, and Shock, ibid., p. 365.

the anesthesia is managed so that respiration is but little increased, the lowering of the carbon dioxid capacity of the blood is slight. Ether hyperpnea, however, causes a very great reduction. Down to the critical level between 33 and 36 per cent. by volume, the process is spontaneously reversible and the animal recovers. Below this level it appears to be irreversible, and death ensues. According to the Yale physiologists, light etherization, such as is otherwise most effective in lowering the carbon dioxid capacity, and most harmful to the subject, loses this influence when administered with sufficient carbon dioxid to maintain the alveolar carbon dioxid at a normal level.

Henderson has long insisted on the dangers underlying overventilation in anesthesia, owing to the acapnia that results.[2] The sequence of events to be taken into account are thus summarized by him: Under ether the alkali reserve of the blood follows and is controlled by the carbon dioxid content, and the carbon dioxid content is in turn dependent on the alveolar carbon dioxid, which is determined by the breathing.

INTRAGASTRIC CONDUCTANCE

The introduction of the stomach tube as an instrument for use in clinical diagnosis is sufficiently recent to enable many of us to recall and survey from personal recollection the helpful contributions which this aid in technic has afforded. It is one of many devices and procedures that have tended to make possible more accurate measurements in a field in which guesswork and assumption previously prevailed. History shows that every instrument of precision applicable in medicine has tended to advance our science and practice to a decidedly higher plane; this is true likewise of devices that permit the application of more exact methods of analysis. It is worth while, perhaps, to emphasize this fact; for one might hastily conclude that progress in the development of instruments and instrumentation has been applicable solely to surgery or mechanotherapy. As a matter of fact, the catheter, the trocar and the gastric sound are useful alike for diagnostic and for therapeutic ends.

The employment of newer forms of instruments, like the duodenal catheter and the modified gastric tube of Rehfuss, have facilitated chemical exploration of more remote portions of the alimentary tract, in the one case, and the removal of contents at frequent intervals, in the other instance. Here, evidently, greater accuracy in analysis of samples of contents, and consequently a clearer insight into the sequence of secretory and digestive phases, have been made possible. The device for the determination of intragastric conductance newly described by Bergeim[3] of the laboratory of physiologic chemistry at the Jefferson Medical College, Philadelphia, gives promise of additional helpfulness in the same field of clinical investigation. It consists of a retention stomach tube in the form of an electrolytic cell which permits the determination of intragastric conductances at any desired interval of time without disturbance or removal of gastric contents. The tip of the device contains a thermocouple which makes possible intragastric temperature determinations and corrections, and an aspiration tube by means of which samples of gastric contents may, if desired, be collected for analysis.

The usefulness of the intragastric conductance apparatus as an aid in diagnostic gastric measurements depends on the fact that the conductance of most biologic fluids is dependent on their content of salts of strong acids and bases. The specific conductance of any solution depends only on the number of ions present and the mobility of those ions, being thus more specific than the cryoscopic index, which is influenced also by the molecules of undissociated substances. Strong acids and bases or the salts of strong acids and bases are very completely dissociated in solution in the concentrations commonly encountered in physiologic fluids. Weak acids and bases and their salts are but slightly dissociated, and neutral organic substances, not salts, do not ionize. These facts led to the hope that estimations of conductance might in many cases at least furnish an index to the concentration of hydrochloric acid in the stomach. Bergeim pointed out that a determination of this character would possess the advantage over titration methods of obtaining the desired data at as frequent intervals as required without any disturbance or removal of gastric contents.

Test experiments have apparently demonstrated the value of the new procedure. Bergeim has already noted that aside from the swallowing of saliva, the conductance of which is low, intragastric conductance, after the first hour or so of digestion, is almost always considerably modified by the regurgitation of pancreatic juice or bile or both, and possibly to a lesser extent by pyloric and duodenal secretions. The conductance of pancreatic juice and bile being usually very low as compared with that of the gastric contents at maximum acidity, regurgitation tends markedly to lower intragastric conductance as well as activity. Conductance, however, rises relative to free hydrochloric acid, on account of the higher salt content of these regurgitated secretions. After the ingestion of mineral acid, neutralization is brought about in the same manner as during digestion. The progress of these studies of the gastric response to food and intragastric digestion, examined in new ways, will be watched with interest.

2. Bryant, John, and Henderson, Yandell: Closed Ether and a Color Sign, THE JOURNAL A. M. A., July 3, 1915, p. 1.
3. Bergeim, Olaf: Gastric Response to Foods, I, The Determination and Significance of Intragastric Conductance, Am. Jour. Physiol., 1917, 45, 1.

LEGISLATION FOR INCREASED RANK FOR MEDICAL OFFICERS

On several occasions THE JOURNAL has emphasized the importance of legislation for increased rank and authority for officers of the Medical Reserve Corps. Specifically it has urged enactment of the recently introduced Owen-Dyer Bill. It has been suggested that modification of this bill would be necessary to secure its passage, but that such modification need not be serious. In any event, some such legislation is not only desirable, but also vitally necessary if common justice is to be rendered to the Medical Reserve Corps, and if the best results are to be achieved by the Medical Department. Apparently the only active opposition thus far has come from the general staff and the Secretary of War. If the newspapers of the country mirror public opinion, certainly the public is in favor of this legislation.

As the Brooklyn *Eagle* says, "The logic of this proposition appeals to every mother whose son is in a home camp or in the country's service abroad. It is inexorable logic. All that the Owen Bill, now pending, does is to give Army surgeons the ranks corresponding to those the Navy grants. It is not a radical, not a revolutionary measure, but it will put an end to conditions greatly injurious to the health protection of American soldiers." The Buffalo *News* thinks that "inasmuch as the measure is calculated to facilitate the work of the Army Medical Corps and benefit the troops by precluding dangerous delays in medical relief, etc., its passage will be welcomed and approved of by every one," and the New York *Globe* states that "the request of the officers of the Medical Reserve Corps to be placed on the same footing as the regular Army medical officers seems to be a perfectly reasonable one. . . . The call of the Army to the medical profession has been enthusiastically responded to. . . . Remediable legislation ought to be enacted without delay and the doctors of the country should help the volunteering members of their profession to win the recognition to which they are entitled by urging their representatives and senators to support the Owen-Dyer Bill." The Chicago *Herald* presents the case for both sides, and states that "lives can be saved and the strength of the Army kept up, medical men think, more easily if greater power commensurate with responsibility were in the hands of the doctors and sanitarians. A decision should be reached without prejudice, and unless it can be lucidly shown that higher ranks for medical officers can have definite disadvantages, General Gorgas' bills should be enacted." The Boston *Herald* notes that the cream of the medical profession of the United States is now included in the Medical Reserve Corps. "They labor under a serious handicap by reason of their inferior rank. . . . Titles ought to correspond to responsibilities. . . . When we realize that in all our wars disease has been responsible for more than 70 per cent. of the mortality, we can get some realization of the importance of the service which we call on the Medical Reserve Corps of the Army to render." The Philadelphia *Record* doubts whether Secretary of War Baker is "seriously against" the legislation. "From an unprejudiced point of view," it says "there would seem to be no good reason why physicians and surgeons who are rendering invaluable service in saving lives and protecting the health of the soldiers should not be raised to a rank commensurate with the importance of their work, especially if that is the case in other armies than our own. The opposition to this apparently simple act of justice betrays the same spirit which fought against the idea that enlisted men in the Army and Navy should be given every opportunity to rise to the highest honors."

In fact, the press is practically unanimous in favoring this legislation. With this encouragement, the physicians of the country should redouble their efforts to let Congress know that the medical profession wishes an early and favorable consideration of legislation for fair treatment of their confrères in military service.

Current Comment

WARTIME ATTITUDES TOWARD DIETARY REFORMS

Any careful observer of the effects of the conditions that the war has brought about in relation to food and diet may observe at work two somewhat contrary tendencies. For one group of our population, representing the most conscientious endeavor to "do one's duty" in the face of the admonition that food will win the war, there is actually a danger of self-imposed denials that may be detrimental to the best welfare of its members; whereas another group, enjoying perhaps for the first time the advantages of high wages and larger incomes, feels the temptation to indulge in unwonted dietary extravagances. The time has come when the indifferent representatives of the latter group must be brought to a realization of their full duty. On the other hand, it may well be asked whether the earnest conservationists are not in danger of impairing their health and vigor by undue dietary restrictions and unwonted substitutions that may lead to lack of appetite and insufficient food intake. Dr. Percy G. Stiles[1] of the Harvard Medical School has given some timely advice to the zealous lest they impose on themselves extreme and ill advised denials. Since a considerable part of our food intake is utilized as fuel to support muscular activity, the added needs of all persons who are engaged in strenuous work must never be forgotten. Sugar furnishes nearly one seventh of the total energy of the American people. As Stiles puts it, the replacement of this is an operation of vast

1. Stiles, P. G.: War Time Diet and Health, Health News, 1918, 13, 28.

magnitude. We must also bear in mind, what has repeatedly been emphasized by THE JOURNAL, that the food needs of growing children are proportionately large, so that they must not be restricted in proportion to their size. An adolescent boy may require more food than a hard working man. Even in war time health and vigor must be conserved in fullest measure, for only thus can the best service be rendered. In making the new adjustments of these days, it is above all essential to preserve a proper mental balance. Hence we commend this salutary advice by Stiles:

> It is within our power to determine whether we will magnify our privations or find an intellectual pleasure in grasping the problem and watching the process of its solution. We may dwell on the unwelcome restrictions or we may with greater advantage rejoice in the new spirit of cooperation. It is likely enough that the dissatisfaction we are tempted to feel with our daily food arises chiefly from the unhappy undercurrent that is in every mind. The terrible facts of the war are to be resolutely faced, but we shall do well to preserve our mental balance by sane recreation, good reading, and other interests detached from this colossal horror. If we can keep a philosophic temper we can make light of dietetic trammels.

WATER WASTE IN CHICAGO

Chicago pumps from Lake Michigan a daily average of 259 gallons per capita. This is the largest amount of water furnished by any waterworks system in the world. The original character of Lake Michigan water is exceptionally satisfactory, but at times the water near the shore becomes more or less contaminated by neighboring towns and to some extent by the city itself. The water supply is not contaminated uniformly and continuously, but its pollution depends largely on weather conditions and the presence of passing vessels. At times also the water becomes highly turbid, owing to the stirring up of the lake by storms and by temperature changes. It is believed by many authorities that eventually Chicago will demand filtration of the supply in order to eliminate impurities and excessive turbidity. The expense of filtering the enormous volume of water now pumped is practically prohibitive, and it would seem as if the volume should be materially reduced if filtration is ever to be carried out. There is no question that a large part of the water pumped through the mains of Chicago is wasted — not used. If the pumpage could be reduced to 125 gallons per capita, a substantial saving would be effected. Cleveland and Milwaukee, also large industrial cities on the Great Lakes, report a daily pumpage per person of 113 and 118 gallons, respectively. It is estimated that nearly 100,000 tons of coal annually are wasted at the Chicago pumping stations in pumping the unnecessary quantity of water that now passes through the mains. All responsible waterworks superintendents and engineers are agreed that the only remedy for this situation is the establishing of universal metering as a policy. It is hardly necessary to point out that metering does not restrict the proper use of water, but merely diminishes the waste. Universal metering in Chicago would also insure an abundant supply at sufficient pressure for all consumers in all parts of the city. It is estimated that in thirty-three years universal metering will save the city $135,000,000. Additional tunnels, cribs and pumping stations will not be needed throughout this period. The prejudice that exists against metering in some quarters is unreasonable and not based on facts. Here is an important measure of conservation which in the long run will be of advantage to the health as well as to the finances of the whole community. The movement to meter the water supply of Chicago should have the active support of every physician.

BONITA, THE BEAUTIFUL

Last week the Propaganda department had a brief history of the Braun family, "Professor John F., Himself," and "Professor Kate A., Herself," now of Peru, Ind. The number of aliases assumed by this family of quacks was mentioned and some of the names were given. Braun for a while called himself "Rev. D. R. Schiller"; Mrs. Braun has appeared under many names, some of them being "Delia Deimling," "Hulda De Muth" and "Mary A. Rose." The latest name with which the Brauns juggle seems to be "Bonita." Now come some Indiana newspapers recording the arrest at Rochester, Ind., of "Miss Bonita Rose of Peru and her brother Oliver Rose." According to the papers, "Bonita . . . enjoyed a few days of fine business" and "it is thought the couple extracted about $500 for their few days service in Rochester." The advertising matter announcing Bonita's coming indicate that "Professor Braun, Himself," had not lost his old skill as a press agent. Here is a sample:

> "Bonita, a noble, beautiful character, was born of poor parents in an obscure American village. This sweet and unpolluted flower of love and kindness has sympathies as wide as the world. She is a perpetual surprise, even to those who know her best. And there is something about her no one has ever been able to explain, not even herself."

This beautiful "unpolluted flower"—whose "mother, Mrs. Mary Rose . . . is also a 'healer'"—is out under bond.

LITERATURE ON RECONSTRUCTION AND REEDUCATION

Among the recent bulletins on reconstruction and reeducation of the disabled soldier to reach THE JOURNAL is the March, 1918, number of "Reconstruction," a bulletin issued by the Invalided Soldiers Commission, 22 Vittoria Street, Ottawa, Canada. It is well illustrated and in addition to special articles on various phases of the work, contains news items, question and answers, and contributions from disabled soldiers presenting their points of view. Another series includes Nos. 4 and 5 of the bulletins issued by the Red Cross Institute for Crippled and Disabled Men, New York City. No. 4 is entitled "A Statistical Consideration of the Number of Men Crippled in War and Disabled in Industry," by I. M. Rubinow. The contents are well described by the title. No. 5, a pamphlet of seventy-five pages, is written by Major R. L. Todd of the Canadian Army Medical Corps, and

is entitled "The French System of Return to Civilian Life of Crippled and Discharged Soldiers." It is a complete study of French methods and experience in this work. Bulletins 5 and 6, issued by the Federal Board for Vocational Education, have also just come to hand, the former entitled "Vocational Rehabilitation of Disabled Soldiers and Sailors" based on a study made by Dr. John Cummings, and No. 6, "The Training of Teachers for Occupational Therapy for the Rehabilitation of Disabled Soldiers and Sailors," by Elizabeth G. Upham. Bulletin No. 5 is divided into five parts, the first concerning general principles and policies; the second a complete review of foreign legislation and experience; the third, the size of the problem; the fourth, an outline for an exhaustive study and report, and the fifth, a reprint of the bibliography of the war cripple compiled by Douglas C. MacMurtrie of the Red Cross Institute for Crippled and Disabled Men. The contents of Bulletin 6 are indicated by the title. These pamphlets may be secured by writing to the Federal Board for Vocational Education at Washington. The division for reconstruction and reeducation of disabled soldiers of the Surgeon-General's Office of Washington has issued two bulletins, in mimeograph for Army use only, consisting of abstracts, translations and reviews of the recent literature on this subject. The first bulletin was issued in January and the second is just received. Together they bring the subject up to date. The recent publications here mentioned are only a few of the many that have been issued since the beginning of the war. Even a cursory reading emphasizes the much to be regretted fact that the great bulk of this material is reduplication. What is needed today, particularly in this field, is coordination and cooperation. Let us emphasize: coordination is especially needed in the literary field. Such reduplication means not only waste of work and expense, but also discouragement for those who are interested in this tremendously important subject.

Acetic Acid and Acetone from Beets.—G. Mezzadroli, an Italian scientist, conceived the idea of utilizing the bacilli contained in both sour milk and beet juice in directly transforming the saccharose in beet juice into lactic and acetic acids as by-products in the manufacture of alcohol and sugar. The bacilli concerned as he designates them are lactic acid invertors and acetic acid invertors. The details of the conversion are given in the *Scientific American*, March 9. Beet juice containing about 10 per cent. of sugar is sterilized for half an hour at 120 C. and then planted with a pure culture of the lactic acid convertor which in a few hours causes it to become highly acid. After several neutralizations with sterile sodium carbonate the acid formation ceases, with the exhaustion of the sugar. The 100 grams of saccharose taking part in the fermentation yields 60 to 80 per cent. of lactic acid, 10 to 20 per cent. of acetic acid and 1 to 7 per cent. of alcohol, with traces of acetone and the higher alcohols. The acetic convertor is even more efficacious than the lactic, but the yield of acetic acid has not exceeded that of the ordinary acetic fermentation. The test amount, 100 grams, of saccharose gave 40 to 50 per cent. of acetic acid, 10 to 20 per cent. of lactic acid and 1 to 2 per cent. of acetone. It is believed that it will be possible to obtain acetic acid by this process without passing through the intermediate stage of alcohol.

Medical Mobilization and the War

Amendments Affecting Medical Officers

Amendments have been proposed in the Senate to the National Defense Act to the effect that members of the Medical Reserve Corps or contract surgeons on active duty for twelve years subsequent to 1898 shall be eligible to appointment as first lieutenant in the Medical Corps, subject to examination, and any officer who fails to pass the physical examination by reason of disability incurred in the service shall be retired with pay and allowance of first lieutenant of the Medical Corps.

Personnel of the Medical Department

For the week ending March 23, the personnel of the Medical Department of the Army included:

Medical Corps: 799, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 177 majors, 2 captains and 451 lieutenants.

Medical Reserve Corps: 18,138, including 1,090 majors, 4,229 captains and 12,819 lieutenants. On active duty: 14,911, including 983 majors, 3,685 captains and 10,243 lieutenants.

Medical Corps, National Guard: 1,236, including 12 lieutenant-colonels, 257 majors, 151 captains and 816 lieutenants.

Medical Corps, National Army: 81, including 3 brigadier-generals, 12 colonels, 59 lieutenant-colonels and 7 majors.

The Dental Corps, 209; Dental Reserve Corps, 5,280, of whom 1,346 are on active duty; Dental Corps N. G., 259; Veterinary Corps, 24; Veterinary Reserve Corps, 1,425, of whom 806 are on active duty; Veterinary Corps N. G., 57; Veterinary Corps N. A., 297; Sanitary Corps, 990, and Ambulance Service, 142, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number MRC	MC,NG	DC,NG	San C.
Physical disability	461	35	6	4
Inaptitude	180	10	0	1
Other branches of the service	377	18	2	42
Domestic troubles	30	0	0	1
Needed by the community	35	1	0	0
Deaths	42	3	0	0
Dismissals	0	2	0	0
Resignations	131	42	5	8
	1,256	111	13	56

Reconstruction Aids

Reconstruction hospitals for the training and reeducation of the wounded and crippled soldiers of the war will soon be established by the medical department of the Army. It is reported that there is now a demand for specially trained women to give remedial exercises and massage to returned soldiers. The members of this force will be called reconstruction aids, 100 of whom are said to be needed immediately, with many more in the near future. The Surgeon-General has announced regulations for the examination of applicants for these positions, who must be graduates of training schools for nurses and furnish one letter of recommendation from an orthopedic surgeon and another from the principal of a school who knows the applicant personally. The Surgeon-General refers women who wish to take this training to the following certified schools: American School of Physical Education, 44 Botolph street, Boston; Boston School of Physical Education, 105 South Huntington Avenue, Boston; Posse Normal School of Gymnastics, 779 Beacon Street, Boston; New Haven Normal School of Gymnastics, 1446 Chapel Street, New Haven, Conn.; Normal School of Physical Education, Battle Creek, Mich., and Reed College, Portland, Ore. The course of training comprises instruction in anatomy, physiology, personal hygiene, the theory of massage and remedial exercises, theory of bandaging, and practice in the last three subjects.

FROM AN M. R. C. OFFICER IN FRANCE

Somewhere in France, Feb. 26, 1918.

The censor permits me to state that I am in France, in the zone of the armies; that I am chief surgeon in a hospital attached to the X..... corps, Y..... army, in the Z..... sector. I shall try, in fear and trepidation, to convey to you the information that twelve of Our Boys—of whom two are officers—are at this moment sharing the benefits of this establishment with their French comrades. Mr. Censor may even

allow me to state that the hospital grounds can still boast of artillery emplacements, trenches and entanglements, although the veterans of the French army are now busily removing these reminders of the terrific conflicts of 1914-1917; which fact, if you only stop to think of it, indicate to my mind that the general staff is not paying much attention to Hindenburg's recent boast that he would dine in Paris on April fool's day!

When I look back to the strenuous days of Fort Benjamin Harrison, and recall the "angor animi" which overwhelmed me when, as C. O. of my company, I shouted "right front in line" instead of "on right into line," thus scattering my men all over the railroad track and causing our esteemed instructor to yell "look at you, look at you; just like a flock of sheep"! I realize that the scene has shifted quite considerably and that other matters, equally vital, now occupy our thoughts!

AEROPLANE RAIDS

Everything is topsy-turvy; as I write in bed, a glorious full moon illuminates the country around me, but heavy black curtains over my window and a tightly closed door, prevent me from gazing at it, no lights being allowed to appear from the outside for fear of attracting the attention of an enemy night prowler of the air. "Damn the moon," remarked an officer to me, as we gazed skyward before retiring, "this means a visit from Fritz tonight."

A clear day means "good visibility" and, while I am strolling along the high road, enjoying the beautiful scenery, Fritz, sitting in the basket of his "sausage" stationary balloon back of yonder hill, is probably telephoning a Boche battery words to this effect: "Idiotic Yankee on high road; three thousand yards; give him hell"! Fortunately you hear the whizz of the coming shell, jump into the trench which borders the road and crouch low until the beastly thing has exploded. Other shells may follow the first one, or Fritz may only have wished to notify you that promenading along the high road was not a healthy occupation, and you retrace your steps in the trench until a turn of the road hides you from those invisible but all-seeing eyes.

Aeroplane bombs give you no warning; you hear the faint purring of the engine, several thousand feet above you, and recognize its nationality by . . . beg pardon, Mr. Censor, but the aeroplane itself is invisible! You take to the nearest shelter and trust that the bomb will not make a direct hit. A terrific "wrrang" loudly informs you that the bomb has touched ground and exploded. As aeroplanes travel rapidly, if the first bomb has fallen near you, you are perfectly safe and crawl out to take a look around; if the explosion is a distant one, you crouch and wait—perhaps for your turn to come!

Protection against shell fragments is easily obtained. Tiers of sand bags, baskets filled with earth or gravel or two parallel sets of chicken wire, 1 foot apart, strung around the hut or ward and filled in with earth, keep you perfectly safe. If the bomb should happen to hit the roof . . . that's another matter! Hospitals are now provided with bomb-proof dugouts and, if the alarm is sounded soon enough, patients and personnel can be placed in absolute safety, even against a direct hit.

A CAMOUFLAGED HOME

It is a long way from the "pup tent," which we were taught to put up or take down in three minutes and forty-five seconds, to the wooden huts in which the officers M. C. now live! Its roof and walls are camouflaged; double chicken wire and earth surround it; doors and windows are tightly closed and curtained at night, as long as any light is burning. In one corner is the cot, surrounded by a 3-foot wall of sand bags, giving one the illusion of a bath tub! You remove a few clothes—none when the moon is shining—take a running jump and clear the sand bags; excellent exercise just before retiring! Having accomplished this acrobatic feat, you place your gas mask and helmet where you can instantly grab them, test your flashlight to see if it has not "gone dead," pull the woolen "crusader's head gear" which loving fingers have knitted for you, over your head, and settle down to dream of enameled bath tubs with hot running water, Castile soap and Turkish towels! Instead of the rumble of the elevated train or the honk honk of the autos on the boulevard, the dull boom of heavy cannon, or short, angry bark of anti-aircraft guns, soothe you to sleep.

A REGIMENTAL AID POST

Let me try and picture to you a typical French regimental aid post, the only kind we shall have as long as trench warfare exists:

To reach it, you zigzag through an evacuation trench from 1 to 4 miles long, 7 feet deep and 4 wide, twisting from right to left until your head is dizzy and you have to lean against the earth, remove your helmet and mop your brow while your semicircular canals are readjusting themselves!

The bottom of the trench may be dry in places, if "duckboards," drainage, soil and climate are all willing that it be so; more often than not, you flounder, slip and splash in the mud and water. Trench evacuation is computed on the basis of four stretcher-bearers per wounded, per kilometer, per hour, which gives one an exact idea of its difficulties. My sympathy and admiration go out to the brave and sturdy men who have to carry a wounded soldier through these mud holes; their work is herculean.

Relay stations are placed five hundred yards apart, in which one or more squads of stretcher-bearers are posted. The station is a dugout, from 10 to 20 feet below the surface of the ground, heated by a small wood-burning stove with a chimney running up the side of the stairway, and lighted by acetylene lamps. The stairway is 3 feet square and placed at an angle of 45 degrees, so that in descending or ascending, the steel helmet demonstrates its immense value, as it bumps against the supporting beams. To watch a loaded stretcher carried down at this perilous angle is a never to be forgotten sight. Should the stretcher bearers get caught in a barrage fire they take refuge, with their wounded, in the relay station.

The particular regimental aid post which I am going to try and describe, is built two stories deep, the first room 16 feet, the second 30 feet below the surface of the ground. Each room is 60 feet long, 18 wide and 7 feet high, securely walled and beamed and divided into three compartments by wooden partitions. The same standard type stairway connects the two rooms.

Behind the lower room runs a gallery 4 feet wide, 7 high and 500 yards long, which connects the aid station with the rest of the Troglodyte village. Over two thousand men live there underground, their health apparently none the worse for the change.

GAS ATTACKS

The upper stories are used as mess rooms, offices, store rooms, etc.; the lower ones as sleeping quarters for officers and men. At each end of the village, the underground gallery has a camouflaged exit, so that in case of a surprise attack at one end, officers and men can escape from the opposite side. Protecting all of the upper entrances are pyramids of sand bags, so that shell fragments cannot fly down the stairways. As a protection against gas attacks, each entrance has a stout sheet of canvas hanging in front of it, immediately behind which is a double door which fits snugly and closes accurately. Six feet down the stairs, a second canvas sheet is placed, and finally, another 6 feet further down a second door and third canvas sheet complete the antigas system. A gas shell can be recognized by the soft "pssst" which it makes when it explodes, very different from the high-explosive "bang."

At the first gas-shell explosion the guard sounds a siren, horn or wooden rattle. Gas masks are immediately applied by officers and men, and every stairway is closed. A hospital corps man seizes a large sprayer (similar to the ones used by fruit growers), filled with a solution of sodium or potassium bicarbonate, and rapidly sprays all three of the canvas sheets. Having done so, he stands between the second door and second sheet and continues to spray the second canvas as long as the attack lasts. The sheet is kept moist but not dripping. At the same time chlorinated lime powder is sprinkled on the floors, especially at the bottom of the stairways. Each of the lower rooms has, at one end, a ventilating shaft, 6 inches square, extending vertically from the ceiling and ending 1 foot above the surface of the earth. A tin cap on a spring hinge enables the shaft to be closed during a gas attack. Attached to the inner side of the cap is a long string which passes down the air shaft into the room. At the first alarm the soldier nearest the shaft has orders to pull the string taut and fasten it to a convenient nail.

OPERATING ROOMS

The operating and dressing room, 16 by 10 by 7 feet, is located immediately in front of the stairway. It is amply lighted by four acetylene lamps and well ventilated. The operating table is a simple but adequate one, and the field instrument case contains all of the necessary instruments for first-aid surgery of the ordinary type. Sterilizing is done by boiling over a very efficient Primus lamp. The

surgeon in charge, a captain, had trained one of his orderlies to give ether or ethyl chlorid anesthesia, and a second orderly acted as assistant.

As in all sanitary formations in the zone of the advance, the amount of operative work depends on the activity of the sector. In periods of ordinary "strafing," thorough excision of lacerated tissues is done; fractures are set and immobilized with traction; hemorrhages are checked by direct ligation of the artery in the wound, and shock is treated by giving hot drinks, lowering the patient's head and placing him in a "cellule chauffante," a hot chamber improvised by means of blankets and an alcohol lamp, hot air being conveyed under the blanket through a metal or wooden chimney.

Sterilization of the wound after excision en masse of all lacerated tissues (débridement) is obtained by means of ether in all deep lacerated wounds or perforating wounds; by tincture of iodin in superficial wounds. The first injection of 500 units of antitetanic serum is given, with morphin whenever indicated. No attempt is made to perform esquillectomy (removal of loose bone fragments), or to remove shell fragments unless they appear within the wound and can be easily extracted. Tracheotomies for manifest edema of the glottis are performed here, but no intracranial, intrathoracic or intra-abdominal surgery is attempted. In other words, the surgeon aims to render a majority of the simpler wounds aseptic, but he, very properly, makes no attempt to do any reparative work amid surroundings which are manifestly inadequate for such procedures.

During active fighting, when as many as two hundred cots are occupied by wounded men, nothing is done except to cleanse the wound with ether and apply a sterile dressing. Antitetanic serum and morphin are given, the former in all cases, the latter when deemed necessary. Put tersely, the regimental surgeon does as much as he can under the circumstances. After almost four years of war, the French sanitary service has learned that a service which lacks elasticity and quick adaptability, is bound to fail. Given the proper staff and personnel, a certain latitude must be allowed each regimental surgeon in order that he may be able to render the best service to the greatest number of wounded in the shortest space of time.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

March 16, 1918.

Lieuts. Hendricks and Good, M. C., and Lieuts. Fink and Shannon, D. C., have been promoted to the grade of captain.

The family of Major Thompson, surgeon to the One Hundred and Ninth Field Artillery, is staying at "The Lenwood."

The large base hospital at Camp Hancock has received an additional quota of trained nurses, and an extra building has been erected to accommodate them.

Thirty-First Division, Camp Wheeler, Macon, Ga.

March 22, 1918.

Camp Wheeler has passed through a severe winter with a high sick rate, but has survived, and is now doing better. The sick rate is moderate, considering that the Thirty-First Division is now more than half draft men. Measles, mumps and pneumonia have practically disappeared. Meningitis was never a menace. Venereal disease has increased during the last month. In spite of a strenuous campaign against immoral houses in Macon, the number of prostitutes has increased. Lieutenant Miner, who works with the Fosdick Commission, has succeeded in securing the conviction of some prominent offenders. Keepers of so-called hotels, really houses of prostitution, have been prosecuted under the 5-mile law, and brought to justice.

Orders for inspection tours by officers of the base hospital have resulted in visits to the neighboring camps by Major Lund, and visits to this camp by Major Halsted of Camp Hancock, and Major Babcock of Fort McPherson.

Thirty-five officers from the base hospital have been selected for service abroad. It is not known how soon they will go, but it is said that there was a scramble to get on the list.

Lieutenant-Colonel Keenan of the sanitary train was at Oglethorpe during the week. Major Patterson accompanied a casual detachment to Camp Merritt.

Lieutenants Bertolet and Leavett have been transferred from the sanitary train to the base hospital.

The long awaited examination for promotion of first lieutenants, M. C. of the National Guard, took place, March 12 and 13. All lieutenants with one year's service were examined. A similar examination for dental surgeon will take place at once.

Major R. C. Turck has been made sanitary inspector of the camp. Major Loren Greene is now sanitary inspector of the Thirty-First Division.

Lieut. William A. McKeever, M. R. C., has been discharged on account of physical disability, and has gone to his home in Philadelphia.

A beginning has been made in the training of convalescents and defectives, in the convalescents at the base hospital. As the war goes on, and the need for first class men becomes greater, this work will assume more and more importance. Men who were or have become unfit for first line duties must be made fit for such other duties as they can perform. Many men not competent for the infantry or artillery can be used in the Quartermaster Corps, the Veterinary Corps, the Ordnance Corps, the Medical Corps and in other places.

Major Turck is sick in the base hospital, but is expected to be out soon.

Eight new ward buildings, of two wards each, are being constructed at the base hospital. They will furnish accommodations for 600 patients.

Two hundred negro draft men have arrived for sanitary work about the camp. They will be of great assistance in drainage and other work. The drainage of the swamp areas within the camp is going on rapidly under the direction of Major Turck and Captain Mitchell. Swamps in Camp Wheeler will soon be a thing of the past. It is hoped to have the work completed before the real mosquito season.

Thirty-Third Division, Camp Logan, Houston, Texas

March 18, 1918.

The wisdom of selecting camps in the more southerly states for most of the training activities of the new Army is becoming more apparent every day. We have had scarcely a day during the winter in which some outdoor work could not be carried on. Even on the windiest and coldest days we see aeroplanes flying as usual, and the absence of snow and wind has contributed to render the drill, trench work, etc., possible at all times.

PERSONAL

Major J. M. Willis, commanding officer of the base hospital, has been promoted to the rank of Lieutenant-Colonel, Medical Corps, National Army.

Major Harry D. Orr, recently director of ambulances, Thirty-Third Division, has received a similar promotion and been placed in command of the Thirty-Third Division sanitary trains.

The visiting English and French officers have given us all a much more intimate knowledge of what may be expected in France than we could possibly attain from other sources, and they are very closely followed by our officers who are receiving instructions from them.

Major J. H. Blackburn, M. R. C., chief of surgery in our base hospital, has just returned from a tour of the hospitals at Camp Beauregard, Alexandria, La., Camp Pike, Little Rock, Ark., and Camp Bowie, Fort Worth, Texas.

Major O. H. Campbell, M. R. C., of Camp McArthur, Waco, Texas, has visited this hospital during the present week, and Major J. N. Hall, M. R. C., of our hospital is to visit three of the neighboring cantonments shortly. This is all in pursuance of the plan to have the chiefs of departments compare notes with others in similar work for the benefit of the service.

Colonel Willis is soon to make a similar tour for conference with other commanding officers.

SURGICAL WORK

Major Blackburn furnishes the following data as to the surgical work in the base hospital:

Personnel of the surgical division, base hospital staff: Major J. H. Blackburn, M. R. C., chief; Capt. W. F. McManus, M. R. C.; Capt. C. H. Parks, M. R. C.; Capt. S. M. Strong, M. R. C.; Capt. W. B. Carroll, M. R. C., orthopedic department; First Lieut. F. L. Patterson, M. R. C., brain surgery; Capt. F. M. Barnes, M. R. C., oral and plastic surgery; First Lieut. W. P. Barton, M. R. C.; First Lieut. J. G. Murfin, M. R. C.; First Lieut. F. N. Haggard, M. R. C.; First Lieut.

O. C. Brown, M. C. N. G.; First Lieut. S. F. Weitzner, M. R. C., roentgenologist.

During the period from Sept. 15, 1917, to Jan. 31, 1918, there were discharged from the service, through the base hospital, 1,748 patients. Those suffering from disabilities which may be classified as surgical were 639 in number, about 36 per cent. Classified as to anatomic regions there were 199 cases involving the feet and legs, including flatfoot (170 cases), hallux valgus, talipes varus, genu valgum and loose bodies in the knee joint. During this time four men with hallux valgus were operated on making a total of 203 cases. There were fifty-four cases of diseases of the joints, the larger percentage of these being in the lower extremities and including arthritis, osteoarthritis, synovitis, ankylosis, dislocations and subluxations.

The diseases of the bones not classified above were twenty-eight in number, and included periostitis, osteomyelitis, necrosis, fractures and exostoses. There were ninety-three deformities of varying character in addition to these of sufficient degree to interfere with the work of the patients as soldiers. A large percentage of these involved the lower extremities; thus we find practically 50 per cent. of the surgical cases of such character and so situated as to interfere with locomotion.

In addition to the deformities above mentioned, there were seven deformities of the spine, including scoliosis, kyphosis, spondylitis and torticollis.

Aside from the flatfoot cases, the largest single class was found to be goiters, of which there were 151. In this class were included simple cystic goiters which were large enough to interfere mechanically on exertion. There were a number of classical cases of exophthalmic goiter in which there were exophthalmos, enlargement of the thyroid and tachycardia. In addition there were a large number of men who under the stress of Army life had developed a tachycardia with a pounding impulse over the precordia, a marked tremor, and very poor cardiac response after exercise. Some of these had slight enlargement or slight exophthalmos, and in some neither of these signs was present.

Fifty-nine hernia patients were discharged. In addition there were ninety-two patients operated on, making a total of 151 cases of hernia.

Diseases of the vascular system were 20 in number, and included varicose veins of the legs, varicocele, phlebitis and hemorrhoids. There were 106 men with hemorrhoids, varicocele and varicose veins operated on, making a total of 126 cases.

There were nine cases of diseases of the testicles, including atrophy, nondescent, orchitis and hydrocele.

Other conditions found in small numbers include peritoneal adhesions producing pain in the abdomen, ischiorectal abscess, congenital absence of the pectoral portion of the pectoralis major muscle, and dyspituitarism with feminine type of development. There were also three cases of myositis of the forearm, two being typical cases of Volkmann's contracture, and the third involving the extensor muscles of the forearm rather than the flexors.

Eighty-Fourth Division, Camp Zachary Taylor, Louisville, Ky.

MARCH 25, 1918.

CONVALESCENT INFIRMARY

Conservation of man power will be one of the principal objects of the convalescing infirmary of the base hospital. Work on the twelve new two-story buildings for this institution was started this morning. They will provide accommodations for 800, increasing the capacity of the hospital to 2,000 patients. Lieut.-Col. Will L. Pyles, superintendent, has received word from Surgeon-General Gorgas, at Washington, D. C., that the additional twelve regular wards for the hospital, which for a time were contemplated, will not be erected. The new buildings are being put up on the west end of the main plant, on the south side of Washington Avenue, between Lincoln Avenue and the Preston-Street Road. They will cost approximately $360,000.

The convalescing infirmary will serve three purposes. Convalescents will be treated there, certain patients will be kept under observation, and the place will be a reconstruction camp for selects suffering from minor physical defects. The infirmary will cover a 10-acre tract. In the center will be a recreation building of the Red Cross. The wards will be connected by long corridors with the main hospital so that the patients may go to the mess hall without exposing themselves to inclement weather.

Drafted men having flat feet, ruptures, or other defects will be put in the infirmary with a view to remedying their trouble and making ablebodied men of them for active military service. It is said that a number of recruits have been discharged for physical disqualifications who could have been saved for Uncle Sam had they been subjected to special treatment.

CONTAGIOUS DISEASES AND FACE MASKS

A new system has been inaugurated in the handling of soldiers suffering from contagious diseases in the effort to avert epidemics. Masks are worn by patients having respiratory ailments during their removals from the regimental infirmaries or barracks to the base hospital, and while they are in the receiving ward. This prevents others with whom they come in contact from breathing the germs. Separate ambulances are used in conveying such patients.

Different entrances are used in admitting them at the hospital and they are segregated from the moment they are classed as "suspects" of communicable diseases by the medical officers of their respective organizations. This is expected to improve the general health conditions at Camp Zachary Taylor.

PASSES TO CAMP

Orders regarding visitors at Camp Zachary Taylor practically close the cantonment to the public with the exception of the regularly established visiting periods, Wednesday and Saturday afternoons and Sundays. Only civilians having passes will be permitted within the reservation and no passes will be issued other than to persons having business dealings with the government.

Passes will not be given to women, the order directs. Persons having relatives or friends at the camp may call at the base hospital or the hostess house, but they cannot enter the grounds except during visiting hours. However, they may call by telephone from these stations to the commander of the unit in which the soldier they are anxious to see is serving, and he may be sent to the hospital or hostess house to meet them.

BASE HOSPITAL

The sick report of Camp Zachary Taylor at the present time is higher than it was during the bad weather. It is stated the reason for this is that a soldier is not discharged from the base hospital until he is able to go from the hospital to the drill field. The sick report shows more than 1,700. The report has been boosted considerably since the new draft arrived on account of many diseases being found among them which under the new regulations hold them in the Army. Three hundred are quarantined with measles, 78 have pneumonia, 16 erysipelas, 2 meningitis, 7 chickenpox and 1 smallpox.

PERSONALS

First Lieut. Val E. Miltenberger reported in compliance with War Department orders and was assigned to duty as sanitary inspector of the Eighty-Fourth Division, which place was made vacant when Major Luther R. Poust was made camp sanitary officer and assistant of the division surgeon, Lieut.-Col. John H. Allen. Major Poust is in the East, having been granted a leave of absence. Col. Albert M. Triby, of the Surgeon-General's Office, who is on a tour of inspection of the cantonments throughout the country, is at Camp Zachary Taylor.

Major Walter Hamburger of the base hospital has been ordered to the following camps to confer with the medical officers: Major Alfred Friedlander, M. R. C., Camp Sherman, Chillicothe, Ohio; Major Ernest E. Irons, M. R. C., Camp Custer, Battle Creek, Mich.; Major Joseph A. Capps, M. R. C., Camp Grant, Rockford, Ill.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending March 15, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY)

All Troops	1,566.0
National Guard Camps	975.1
National Army Camps	2,075.0
Regular Army	1,279.1

2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:

All Troops	50.6
National Guard Camps	40.2
National Army Camps	58.8
Regular Army	44.2

3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):

All Troops	7.5
National Guard Camps	4.2
National Army Camps	9.1
Regular Army	7.9

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING MARCH 15, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	9	..	..	21	9	1	2	2	880.0	22.7
Hancock	6	..	..	26	12	..	1	3	209.6	23.6
McClellan	4	..	..	19	17	1	...	0	614.2	20.3
Sevier	5	..	..	35	...	..	..	1	1,302.0	62.5
Wheeler	12	1	1	43	..	..	..	6	1,107.1	61.6
Logan	9	..	1	40	12	1	..	0	1,659.9	39.2
Cody	12	..	..	5	...	2	...	3	511.7	22.0
Doniphan	6	..	..	30	1	..	1	4	1,321.2	43.1
Bowie	14	..	..	24	2	..	..	7	1,616.7	39.2
Sheridan	1	..	..	62	1	..	1	0	979.8	25.5
Shelby	..	..	..	23	...	..	..	5	1,217.5	49.3
Beauregard	10	..	1	31	1	2	..	1	1,213.6	49.3
Kearny	3	..	..	2	1	..	7	1	1,172.7	49.7
Devens	17	..	..	33	9	..	6	3	1,381.2	41.3
Upton	27	..	..	63	5	..	1	15	1,855.5	35.6
Dix	11	2	..	27	13	..	6	2	3,075.0	52.5
Meade	20	..	..	21	2	2	24	5	928.8	24.0
Lee	11	..	..	154	5	..	..	6	1,486.2	60.8
Jackson	22	1	..	169	5	3	1	3	1,790.5	56.2
Gordon	7	..	..	133	10	1	...	4	1,382.6	42.6
Sherman	15	..	..	31	19	..	21	0	2,251.1	64.1
Taylor	20	..	..	17	20	2	2	5	1,365.3	70.4
Custer	..	..	..	12	1	..	3	1	1,040.0	43.7
Grant	19	..	..	19	13	2	28	1	878.2	21.5
Pike	11	..	11	148	29	..	12	7	4,259.7	79.6
Dodge	16	..	..	51	61	..	16	7	2,422.3	68.4
Funston	18	1	1	13	6	2	1	5	4,048.5	117.5
Travis	24	..	5	33	53	..	..	6	3,167.0	68.4
Lewis	7	..	..	35	41	1	25	3	1,875.5	83.5
Northeastern Dept.	3	..	..	32	...	..	...	1	1,075.7	34.1
Eastern Dept.	6	..	..	36	16	3	...	4	1,542.0	36.8
Southeastern Dept.	3	..	..	73	9	1	7	5	956.4	43.6
Central Dept.	13	..	1	29	19	..	17	4	1,302.3	45.0
Southern Dept.	9	..	1	162	82	..	17	4	1,040.7	49.2
Western Dept.	9	..	..	33	70	1	27	7	963.0	36.8
Aviation, S. C.	21	1	2	91	134	4	25	21	1,382.8	48.2
Camp Greene	9	1	2	42	22	1	6	0	686.5	23.5
Camp Fremont	1	..	..	18	9	..	2	0	1,072.0	45.5
El Paso	..	..	..	9	5	..	2	0	1,498.8	8.0
Columbus Bks.	2	..	..	23	2	..	3	1	2,079.3	55.5
Jefferson Bks.	5	..	..	96	6	..	4	1	2,450.0	171.5
Fort Logan	1	..	..	2	8	..	2	0	2,250.0	26.0
Fort McDowell	..	..	..	6	7	..	..	1	1,824.0	45.0
Fort Slocum	9	..	..	11	1	..	..	1	2,363.8	47.9
Fort Thomas	2	..	..	3	...	..	...	1	195.4	57.4
D. B. Alcatraz	...	..	..	..	..	..	..	0	657.0	15.0
D. B. Fort Leavenworth	...	..	..	3	1	..	...	0	1,488.0	34.0
A. A. Humphreys	...	..	..	5	1	..	..	0	1,111.0	11.1
J. E. Johnston	...	..	1	12	2	1	...	0	753.6	31.4
Camp Merritt	17	..	..	79	9	..	26	4	2,304.6	84.4
Camp Stuart	28	..	..	19	7	4	1	9	1,681.3	66.4
West Point, N. Y.	..	..	..	..	..	16	..	1	1,503.5	50.3
Edgewood	..	..	..	..	1	..	..	0	2,026.1	56.1
General Hospitals	3	..	..	18	7	..	1	3		
Nat'l Guard Depts.	2	..	..	22	16	..	..	0		
Nat'l Army Depts.	7	..	6	62	67	..	15	4		
Total (all troops)	466	6	31	2,136	795	37	312	184	1,568.0	50.6

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending Mar. 15, 1918	Regulars in U. S., Week Ending Mar. 15, 1918	National Guard, All Camps, Week Ending Mar. 15, 1918	National Army, All Camps, Week Ending Mar. 15, 1918	Expeditionary Forces, Week Ending Mar. 7, 1918
Pneumonia	21.0	16.0	14.1	29.5	26.5
Dysentery	0.3	0.2	0.1	0.3	1.0
Malaria	1.5	0.5	0.4	1.9	0.4
Venereal	90.6	90.4	54.6	109.8	48.5
Paratyphoid	0.0	0.0	0.0	0.0	0.0
Typhoid	0.0	0.0	0.0	0.0	0.0
Measles	33.7	43.6	8.7	33.9	16.2
Meningitis	1.6	1.8	1.4	1.5	0.6
Scarlet fever	13.2	16.3	1.9	17.2	21.2

ORDERS TO OFFICERS OF THE MEDICAL CORPS

To New York City, Hoboken, N. J., Camp Merritt, N. J., for duty, and on completion *to his proper station*, Brig.-Gen. CHARLES RICHARD.

To Allentown, Pa., for inspection, and on completion *to his proper station*, Col. THEODORE C. LYSTER.

To Baltimore, Md., for inspection, and on completion *to his proper station*, Col. WESTON P. CHAMBERLAIN.

To Fort Oglethorpe for inspection, and on completion *to his proper station*, Col. ELLIOTT C. BRACKETT.

To Camp Kearny, Linda Vista, Calif.; *Camp Fremont*, Palo Alto, Calif., for conference, and on completion *to his proper station*, from Camp Cody, Lieut.-Col. JACOB M. COFFIN.

To Mineola, Long Island, N. Y., for inspection, and on completion *to his proper station*, Lieut.-Col. PEARCE BAILEY.

To Waynesville, N. C., for duty, and on completion *to his proper station*, Lieut.-Col. EARL W. BRUNS.

To Army Medical School for duty, Major CLARENCE L. COLE.

To Camp Gordon, Atlanta, Ga., for duty, from Camp McClellan, Major LUTHER H. REICHLEDERFER.

To Fort Riley for duty, from Camp Doniphan, Major WILLIAM S. LAWRENCE. For instruction, having passed the preliminary examination for appointment in the Medical Corps, Lieut. ROY M. COX.

To Metuchen, N. J., for duty, from Allentown, Major CHARLES C. HILLMAN.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Greene, Lieut. PAUL B. SMITH.

To Columbus Barracks, Ohio, for duty, from Philadelphia, Lieut. WILLIAM L. STRANES.

To Newport News, Va., for temporary duty, from Army Medical School, Lieut. ROYAL K. STACEY.

Resignation of Lieut. CHESTER C. BULLARD is accepted.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. ALFRED C. SMITH, Shawnut.

To Fort McHenry, Md., for duty, Lieut. HARRY C. EDMUNDSON, Birmingham.

To Fort Oglethorpe for instruction, Capt. HUGH BOYD, Scottsboro; Lieuts. ARTHUR JOHNSON, Clanton; ROBERT H. COKER, East Tallassee; THEODORE M. BLAKE, Fruitdale; JOHN P. SCALES, Livingston; from Camp Beauregard, Lieut. FLOYD L. ABERNETHY, Flomaton; from Camp Sherman, Lieut. ALBERT D. McFADDEN, Ariton.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. JAMES O. MORGAN, Piedmont.

To Laurel, Md., for duty, from Fort Oglethorpe, Lieut. JAMES F. BEAN, Brundidge.

To Los Angeles, Calif., for duty, from Camp Kearny, Lieut. GUY E. STEWART, Attalla.

To New Orleans, La., for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. JOSEPH A. MAXWELL, Tuscaloosa.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. THOMAS H. STREET, Alexander City.

To New York City for instruction, from Camp Bowie, Lieut. CHARLTON S. HARRIS, Birmingham.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Newport News, Major EUGENE DeB. BONDURANT, Mobile.

For duty, on completion of instruction at Philadelphia, Lieut. LONNIE W. GROVE, Tuscaloosa.

Arizona

To Fort Riley for instruction, Lieuts. FRED O. LION, Clifton; JEROME McM. LEONARD, Douglas; THOMAS J. BOULDIN, St. Johns; ROY R. KNOTTS, Yuma.

Arkansas

To Army Medical School for instruction, Lieuts. JAMES J. ROCK, Iowa City; AMOS E. ROBINSON, Leachville.

To Camp Logan, Houston, Texas, for duty, from Camp Joseph E. Johnston, Capt. EDWIN BLEDSOE, Little Rock.

To Camp Pike, Little Rock, Ark., base hospital, from Camp Pike, Lieut. FRANK L. CASTLEBERRY, Paragould.

To Dansville, N. Y., for temporary duty, from Fort Oglethorpe, Lieut. CARL S. BUNGART, Fort Smith.

To Fort McPherson, Ga., for duty, Major WILLIAM A. SNODGRASS, Little Rock.

To Fort Oglethorpe for instruction, Lieuts. HERBERT S. WATSON, Earle; FRED R. MORROW, Green Forest; GROVER C. WEBB, Hector; CHARLES E. BYLER, Lepanto; LOUIS D. H. DONALDSON, Parma; MOSES C. HUGHEY, Rector.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. NICHOLAS W. RIEGLER, Little Rock.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. ALFRED C. HEARN, Arkadelphia.

California

To Camp Fremont, Palo Alto, Calif., base hospital, Capt. JAMES T. DISHER, Los Angeles.

To Camp Kearny, Linda Vista, Calif., for duty, from Camp Kearny, Capt. LEWIS D. REMINGTON, Monrovia.

To Fort Des Moines, for duty, from Camp Kearny, Capt. WILLIAM J. CHAMBERS, Los Angeles.

To Fort Riley for instruction, Lieut. EARL L. LUPTON, Los Angeles.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from San Francisco, Capt. HENRY W. HORN, San Francisco.

To Newport News, Va., for temporary duty, from Fort Riley, Capt. WILLIAM W. ROBLEE, Riverside.

To San Diego, Calif., Rockwell Field, Aviation Section Signal Corps, for duty, Lieuts. FRANCIS X. AMMAN, Jr.; MILTON D. W. JEFFS, Los Angeles.

To San Francisco, Calif., for duty, Capt. FRANK L. DOANE, Red Bluff.

To Western Department for duty, Lieut. LLOYD B. CROW, San Francisco.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. ERNEST F. WOODWARD, Los Angeles.

Canal Zone

To Allentown, Pa., Concentration Camp, for duty, from Fort Riley, Major THOMAS J. LEARY, Cristobal.

Colorado

To Camp Dix, Wrightstown, N. J., for duty, from Fort Riley, Lieut. LOUIS O. BOLTON, Cedaredge.

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Dodge, Lieut. PHILIP WORK, Pueblo.

To Camp Logan, Houston, Texas, base hospital, from Philadelphia, Lieut. TOM R. KNOWLES, Colorado Springs.

To Fort Oglethorpe for instruction, from Camp Sherman, Lieut. ORION A. GRANTHAM, Johnstown.

To Fort Riley for instruction, Lieut. OSCAR A. DUNCAN, Crawford.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, from Fort Riley, Lieut. AUGUSTINE S. CECCHINI, Denver.

Connecticut

To Army Medical School as tuberculosis instructor, from Camp Grant, Capt. CHARLES H. TURKINGTON, Fitchfield. For instruction, Lieuts. RALPH L. WHITE, New Canaan; FRED W. COMSTOCK, BURTON E. LOVESEY, New Haven; JOHN W. CALLAHAN, Norwich.

To Camp Gordon, Atlanta, Ga.; *Camp Wheeler*, Macon, Ga.; *Camp Hancock*, Augusta, Ga.; *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Sevier, Major JOHN S. DYE, Waterbury.

To Camp Wheeler, Macon, Ga., for temporary duty, and on completion *to Camp Shelby*, Hattiesburg, Miss., for duty, from Camp Bowie, Capt. OTTO G. WIEDMAN, Hartford.

To Fort Oglethorpe for duty, from Fort Hamilton, Lieut. LEONARD J. LOWE, Higganum. For instruction, Lieut. SIMON B. KLEINER, New Haven.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. SAMUEL E. WITT, Chesterfield; JAMES P. McMANUS, Hartford.

To New York City, Neurological Institute, for intensive training, Capt. WILLIAM R. MILLER, Southington. *Bellevue Hospital*, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Lieut. ANDREW J. JACKSON, Waterbury. On completion *to Fort McPherson, Ga.*, for temporary duty, Lieut. RAYMOND H. RYDER, Waterbury.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Capt. FRITZ C. HYDE, Greenwich.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. NAPOLEON B. LEWIS, Norwich.

Delaware

To Cape May, N. J., for temporary duty, from Philadelphia, Lieut. EDWIN H. LENDERMAN, Wilmington.

To Fort Oglethorpe for instruction, Lieuts. JAY H. McCLELLAN, Pinehurst; HENRY R. KRITZER, Wilmington.

District of Columbia

To Camp Dix, Wrightstown, N. J., for duty, and on completion *to his proper station*, Major SCOTT D. BRECKENRIDGE, Washington.

To Annapolis Junction, Md., for duty, from Camp Meade, Lieut. HARRY C. KING, Washington.

To Fort Riley for instruction, Capt. OTTO L. MUENCH, Washington.

To New York City, Neurological Institute, for instruction, and on completion *to Camp Meade*, Washington, Major HARRY H. KERR, Washington. *Bellevue Hospital*, for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Camp Wadsworth, Lieut. SIDNEY C. COUSINS, Washington. From Fort Oglethorpe, Lieut. PAUL S. PUTZKI, Washington.

Florida

To Camp Wheeler, Macon, Ga.; *Camp Gordon*, Atlanta, Ga.; *Camp Hancock*, Augusta, Ga.; *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Joseph E. Johnston, Major HARRY A. PEYTON, Jacksonville.

To Fort Oglethorpe for instruction, from Camp Meade, Major HERMAN HARRIS, Jacksonville. For instruction, Lieuts. JOHN D. GABLE, Bonifay; RALPH D. MURPHY, St. Petersburg.

Georgia

To Army Medical School for instruction, Lieuts. DANIEL O. KELLEY, Lawrenceville; THOMAS B. KING, Sandersville.

To Atlanta, Ga., School of Technology, for duty, from Atlanta, Capt. JOHN H. HALL, Lieut. ERNEST S. COLVIN, Atlanta.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, JAMES Q. FOLMER, Atlanta.

To Camp Sherman, Chillicothe, Ohio, for duty, from Fort Oglethorpe, Lieut. STEPHEN T. BROWN, Atlanta.

To Fort Oglethorpe for instruction, Lieuts. HOMER L. REDD, Atlanta; WILLIAM O. SHEPARD, Blakely; RALPH J. GREENE, Bluffton; HOMER BOWEN, Claxton; THOMAS R. MOYE, Ebbsville; REUBEN T. CAMP, Fairburn; HAMPTON M. BARKER, KARL H. BARTH, Flintstone; CLEVELAND D. WHELCHEL, Gainesville; LOUIS B. ROYAL, Girard; WALLACE H. CLARK, La Grange; MELL AYCOCK, Monroe; FRANCIS M. BURKHALTER, Nashville; EVERETT STOTHART, Savannah; MASTIN L. PIPES, Ty Ty; CLAUDE H. SULLIVAN, Zebulon; from Camp Beauregard, RALPH E. HAMILTON, Douglasville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. HORACE F. STILTNER, Chickamauga.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. ALVAH W. WHITE, Des Moines; WILBUR M. SCOTT, Devereaux.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. PAUL F. LANE, Waycross.

To Rochester, Minn., for instruction, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. JOHN A. WHITE, Albany.

To West Point, Miss., for duty, from Fort Oglethorpe, Lieut. ERNEST R. HARRIS, Bethlehem.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Capt. WILLIAM C. HUMPHRIES, Acworth.

To the inactive list, from Atlanta, Major WILLIAM C. LYLE, Augusta.

Honorably discharged, Lieut. EUGENE THOMPSON, Lumber City.

Idaho

To Army Medical School for instruction, Lieut. SIMON HOPPER, Cambridge.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. ELTON B. ROGERS, Winchester.

Illinois

To Army Medical School for instruction, Lieuts. RICHARD F. GREENING, FRED M. SMITH, Chicago; BRUCE A. HARRISON, Colchester; BENJAMIN H. MUGGINS, Evanston; SAMUEL M. HUBBARD, Ridgefarm; HENRY F. HOESLEY, Woodstock.

To Allentown, Pa., Concentration Camp, for duty, from Philadelphia, Lieut. EVERETT F. COLEMAN, Canton.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CHARLES W. MONROE, Arthur.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieuts. JESSE H. ROTH, Kankakee; JAMES T. BREAKEY, Mason.

To Camp Custer, Battle Creek, Mich., as tuberculosis specialist, from Fort Oglethorpe, Lieut. EDWARD BUCKMAN, Chicago.

To Camp Devens, Ayers, Mass., base hospital, from New York City, Capt. THOMAS W. MORGAN, Virden.

To Camp Dodge, Des Moines, Iowa, base hospital, Capt. DUNCAN B. McEACHERN, Chicago.

To Camp Doniphan, Fort Sill, Okla.; *Camp Bowie*, Fort Worth, Texas, and *Fort Riley*, for conference, and on completion *to his proper station*, from Camp Dodge, Major JOSEPH L. MILLER, Chicago.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. WILLIAM T. ELLIOTT, Chicago.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. WALTER C. HINSON, Charleston.

To Camp McClellan, Anniston, Ala., base hospital, from Camp McClellan, Lieut. WALTER S. CONN, Naperville.

To Camp Meade, Annapolis Junction, Md., base hospital, on completion of instruction at Philadelphia, Capt. FRANK W. BRODRICK, Sterling.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Sheridan, Capt. GEORGE C. SHOCKEY, Melrose Park.

To Camp Sherman, Chillicothe, Ohio; *Camp Zachary Taylor*, Louisville, Ky.; *Camp Custer*, Battle Creek, Mich., base hospitals, and on completion *to his proper station*, from Camp Grant, Major JOSEPH A. CAPPS, Chicago. Base hospital, from Philadelphia, Capt. ROBERT A. NOBLE, Bloomington. For duty, from Fort Oglethorpe, Lieut. ALEXANDER W. BURKE, Chicago.

To Camp Wheeler, Macon, Ga., for temporary duty, and on completion *to his proper station*, from Camp Logan, Lieut. THOMAS J. RIACH, Kankakee.

To Camp Zachary Taylor, Louisville, Ky.; *Camp Sherman*, Chillicothe, Ohio; *Camp Grant*, Rockford, Ill.; *Camp Dodge*, Des Moines, Iowa, base hospitals, and on completion *to his proper station*, from Camp Pike, Major HUGH McKENNA, Chicago.

To Chicago, Ill., base hospital, Lieut. EARLE B. FOWLER, Chicago. Presbyterian Hospital for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, Lieut. FRANK M. WELDY, Chicago. On completion *to Camp Grant*, Rockford, Ill., from Fort Riley, Lieut. WILLIAM J. PICKETT, Chicago.

To Fort Oglethorpe for instruction, Lieuts. DOLPHUS R. COMPERE, RUSSELL M. THADDEUS S. PIERZYNSKI, GERHARD J. TERELL, Chicago; HENRY K. HOOKER, Dewitt; from Camp Custer, Lieut. GRANT J. GRAY, Chicago; from Camp Sherman, Lieuts. ROY M. MONTFORT, Danville; JOSEPH C. BROOKHART, Greenup.

To Fort Riley for instruction, from Camp MacArthur, Capt. MICHAEL GALAGHER, Chicago. Base hospitals, Lieuts. VIVIAN J. NEALE, DANIEL C. WEYMOUTH, Chicago; ORA R. SAUL, Dana. For duty, from Fort Riley, Lieuts. LAZARUS COHLER, BRONISLAUS J. MIX, Chicago.

To Fort Sill, Okla., base hospital, from Fort Riley, Lieut. MICHAEL B. GUTHRIE, Chicago.

To Garden City, Long Island, N. Y., for duty, from New York City, Lieut. GROVER C. OTRICH, Belleville.

To Hoboken, N. J., for temporary duty, from Camp Custer, Major JOSEPH R. HOLLOWBUSH, Rock Island.

To Jefferson Barracks, Mo., for duty, from Camp Sherman, Capt. RUSSELL E. ADKINS, Chicago.

To Lakewood, N. J., for temporary duty, from Washington, D. C., Lieut. WILLIAM W. WILEY, Bloomington.

To Middletown, Pa., Aviation Section Signal Corps, for duty, from Fort Oglethorpe, Lieut. CLINTON L. MONTGOMERY, Blue Island.

To New Orleans, La., Charity Hospital, for instruction, and on completion *to his proper station*, from Camp Pike, Capt. RAYMOND C. GILLOGLY, Newman; from Camp Sherman, Lieut. MAURY H. McRAE, Chicago.

To Newport News, Va., for duty, from Camp Lee, Capt. MARSHALL WALLIS, Normal; from Fort Oglethorpe, Capt. OSMAN A. COSS, Saunemin; from Fort Riley, Lieut. BENJAMIN RAPPAPORT, Chicago.

To New York City, and *White Plains, N. Y.*, for inspection, and on completion *to his proper station*, Major JOHN A. HORNSBY, Chicago. *To New York City*, Bellevue Hospital, for instruction and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Capt. FRANK C. SIBLEY, Carmi. For instruction and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. RELZA N. SHERMAN, Fairmount. On completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Lieut. CHESTER W. TROWBRIDGE, Oak Park.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Riley, Lieut. HORACE M. FRANCIS, Woodstock. On completion *to Camp McClellan*, Anniston, Ala., base hospital, from Fort Riley, Lieut. GEORGE F. RENDLEMAN, Anna.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, Lieut. WALTER C. MOHR, Chicago.

To Rochester, Minn., for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Fort Riley, Lieut. HOWARD S. PERRY, Chicago.

To Rockefeller Institute for instruction, and on completion *to Camp Devens*, Ayer, Mass., base hospital, from Fort Riley, Capt. FREDERICK A. FISHER, Chicago.

To Washington, D. C., for duty in the Surgeon-General's Office, from Washington, D. C., Major FRANK BILLINGS, Chicago.

To Williamstbridge, N. Y., for duty, from Fort Oglethorpe, Lieut. EDWIN S. GILLESPIE, Wenona.

Honorably discharged, Lieut. WILLIAM H. MILLER, Chicago. On account of physical disability existing prior to entrance into the service, Lieut. ARTHUR W. DOWNS, Chicago.

Resignation of Capt. ELDORADO W. SCOTT, Chicago, accepted.

Indiana

To Army Medical School for duty, from Army Medical School, Capt. KARL C. EBERLY, Fort Wayne. For instruction, Lieuts. BENJAMIN F. WRAY, Camden; SHERMAN L. McKINNEY, Huntingburg; IRVIN E. HUCKLEBERRY, Salem.

To Belleville, Ill., Signal Corps Aviation School, for duty, from Fort Oglethorpe, Lieuts. WESLEY M. HALL, E. Enterprise; BLAINE A. BLOSSER, Fremont.

To Boston, Mass., for duty, from Fort Oglethorpe, Lieut. ELMO R. ROYER, N. Salem.

To Camp A. A. Humphreys, Accotink, Va., base hospital, from Fort Ethan Allen, Capt. OMER A. NEWHOUSE, Montezuma.

To Camp Custer, Battle Creek, Mich., base hospital, from Fort Oglethorpe, Capt. JAMES H. WALKER, Jeffersonville.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JULIUS J. GROSVENOR, Richmond.

To Camp Fremont, Palo Alto, Calif., as division psychiatrist, from Camp Fremont, Major FRANK P. HUTCHINS, Indianapolis.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. WILLIAM L. ROYSTER, Indianapolis.

To Camp John Wise, San Antonio, Texas, for duty, from Indianapolis, Lieut. BERNARD J. LARKIN, Indianapolis.

To Camp Zachary Taylor, Louisville, Ky., as tuberculosis specialist, Lieut. STEPHEN C. MARKLEY, Richmond.

To Chicago, Ill., Presbyterian Hospital, for instruction and on completion *to Camp Sherman*, Chillicothe, Ohio, for temporary duty, Capt. WILBUR W. MYERS, Porter.

To Fort Oglethorpe for instruction, Capt. FRANKLIN T. KILGORE, Daleville; from Camp Sherman, Capt. AMZI W. HON, Indianapolis. For instruction, Lieuts. DAVID L. LUTES, Columbia City; FRED N. WILLIAMS, Tell City.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. PAUL A. GARBER, Sidney.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. SAMUEL G. JUMP, Selma.

To New York City, Bellevue, Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., from Fort Oglethorpe, Lieut. JOHN E. FREED, Terre Haute.

To Rochester, Minn., for instruction and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Capt. GEORGE W. KIRBY, Goshen.

Honorably discharged, Lieuts. JESSE L. STOWERS, Indianapolis; EARL L. WHITE, Rochester.

Iowa

To Army Medical School for instruction, Lieuts. JOHN H. McCALL, Allerton; HARRY F. KIESLING, Dayton; THOMAS B. HERRICK, Marson; EUGENE H. McCAFFREY, Maquoketa; OSCAR H. BANTON, Nora Springs; CHARLES T. FARLOW, Vetter.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CARLES D. BUSBY, Brooklyn; from Camp Shelby, Lieut. PERCY B. BATTEY, Indianapolis.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. HARRY F. RUBEL, Struble.

To Camp Upton, Long Island, N. Y., for duty, from Fort Riley, Lieut. WALTER F. SCHMALTZ, Mount Ayr.

To Chicago, Ill., Presbyterian Hospital, for instruction and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Capt. WILLIAM M. TROTTER, Maxwell.

To Fort Riley, base hospital, Lieut. SEWARD WHITE, Olin. For duty, from Fort Riley, Lieut. REX V. HENRY, Hedrick. For instruction, Lieut. ARTHUR M. WASHBURN, Burlington; from Camp Dodge, Lieut. ADAM H. KONIGMACHER, Missouri Valley.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Sevier*, Greenville, S. C., Capt. JAMES R. BRADY, Sioux City.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Riley, Capt. WILLIAM L. HEARST, Cedar Falls.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. ALVIN H. HANDRICKSON, Sioux City.

To Washington, D. C., for duty, from Camp Lee, Major EDWIN A. MERRITT, Council Bluffs.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. PAUL NICOLAI, Des Moines.

Kansas

To Army Medical School for instruction, Lieut. IRL E. HEAPSTED, Burrton.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. DANIEL A. HOLLAND, Cambridge.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieuts. BOYD F. EYE, Ottawa; WALTER O. QUIRING, Shawnee.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. CHARLES A. THOMAS, Edna.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieuts. GEORGE E. BRETHOUR, Dwight; JOHN O. DINGUS, Mound City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. FRANK W. SHELTON, Independence.

To Fort Des Moines, Iowa, for duty, from Camp Pike, Lieut. CLARENCE C. HARVEY, Emporia.

To Fort Oglethorpe for instruction, Lieut. JOHN RUDBECK, Seneca.

To Fort Riley for duty, from Fort Riley, Capt. CHARLES J. McGEE, Leavenworth. Base hospital, Lieut. GEORGE JENNINGS, Simpson. For instruction, Lieuts. CYRUS C. MORRISON, Toronto; CHARLES A. WYATT, Waskarusa; DUFFIELD R. KRUGER, Waldron.

To Houston, Texas, Ellington Field, for duty, from Fort Riley, Lieut. WILLIAM S. FLEMING, Ness City.

To New Orleans, La., Charity Hospital, for instruction and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. HENRY H. HAERLE, Niles.

To Newport News, Va., for duty, from Camp Jackson, Lieut. ROBERT C. DAVIS, Kansas City.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Oglethorpe, Capt. JOHN F. RUDELPH, Belle Plaine. On completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Riley, Lieut. CLARENCE W. HALL, Hutchinson.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JAMES C. BUTLER, Stafford.

Kentucky

To Army Medical School for instruction, Lieuts. JOHN N. HARRALSON, Grayham; WALTER B. HUGHES, New Port.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. JAMES D. BIGGS, Greenup.

To Camp Custer, Battle Creek, Mich., base hospital, from Philadelphia, Capt. BENJAMIN F. ZIMMERMANN, Louisville.

To Camp Dodge, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Capt. ARTHUR C. McCOY, Louisville.

To Camp Pike, Little Rock, Ark., as tuberculosis specialist, Capt. FRANK B. DEWITT, Rockport.

To Fort Oglethorpe for instruction, Capts. GEORGE W. PAYNE, Bradwell; SAMUEL M. RICHIE, Dwarf; HUBERT B. BLADES, LaGrange; Lieuts. EDWARD ADAMS, Beas; CHARLES HUNT, Clinton; WILLIAM M. WATKINS, Louisville; DAVID H. BUSH, Mt. Sterling; FREDERICK C. WEBER, Newport; YANDELL Y. MILLER, Fryersburg. For duty, from Camp Beauregard, Lieut. CHARLES P. VOIGT, Valley Station.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. WILLIAM F. PEEBLES, Clinton.

To Metuchen, N. J., for duty, from Fort Oglethorpe, Capt. DALFERES P. CURRY, Bowling Green.

To New Orleans, La., Charity Hospital, for instruction and on completion *to Camp Beauregard*, Alexandria, La., base hospital, from Fort Oglethorpe, Major PHILIP E. STEWART, Paducah. On completion *to Camp Bowie*, Fort Worth, Texas, from Fort Oglethorpe, Lieut. CARL B. ABELL, Ashland. On completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Oglethorpe, Lieut. HARRY P. HONAKER, Horse Cave.

To Newport News, Va., for duty, from Fort Oglethorpe, Capts. CLAYTON W. SHOW, Alexandria; JAMES H. HARPER, Gimlet; SAMUEL R. HAROVER, Maysville; Lieut. RANDOLPH DADE, Hopkinsville.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. SAMUEL B. MARKS, Lexington.

To Portland, Ore., for duty, from Camp Lewis, Lieut. TIMOTHY T. GIBSON, Middlesboro.

To Rockefeller Institute for instruction and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Fort Oglethorpe, Capt. JOSEPH C. SHERRILL, Louisville. On completion *to Williamsbridge, N. Y.*, for duty, from Fort Oglethorpe, THOMAS H. KELLY, Covington.

Honorably discharged, Lieut. PRATHER B. CURLIN, Hickman.

Louisiana

To Army Medical School for instruction, Lieut. CHARLES E. HAMILTON, Sunset.

To Fort Oglethorpe for instruction, Lieuts. RUFFIN T. PERKINS, JOHN C. McKEEN, New Orleans; from Camp Beauregard, Lieut. GEORGE R. UPTON, New Orleans.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. WILEY H. BILLINGSLEY, Shreveport.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieut. WILLIAM L. STONE, Homer.

To Jackson Barracks, La., for duty, from Jackson Barracks, Lieut. EDWARD J. HUHNER, New Orleans.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. ARTHUR R. CHAPPIN, Boyce.

To Walter Reed General Hospital, Takoma Park, D. C., for temporary duty on completion of instruction at Philadelphia, Major KARL W. NEY, New Orleans.

To Watervliet, New York, for duty, from Fort Oglethorpe, Lieut. WILLIAM McL. HAYES, New Orleans.

Maine

To Camp Devens, Ayer, Mass., base hospital, from Philadelphia, Capt. WALTER E. WHITNEY, Bangor.

To Camp Stewart, Newport News, Va., for duty, from Fort Oglethorpe, Lieut. HENRY E. MARSTON, North Anson.

To Fort Oglethorpe for instruction, Capts. HENRY M. CHAPMAN, Bangor; WALTER E. HAMMOND, Enfield; from Camp Sherman, Capt. SUMNER C. PATTEE, Searsport. For instruction, Lieut. FREEMAN F. BROWN, Vinalhaven.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. JOHN L. PEPPER, Madison.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. NEIL A. FOGG, Freeport.

To Philadelphia, Pa., for instruction, and on completion *to Camp Meade*, Aspasquin Junction, Md., base hospital, Lieut. HAROLD S. PRATT, Farmington.

Maryland

To Camp Wadsworth, Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. HUMPHREY D. WOLFE, Mt. Washington.

To Fort Oglethorpe for instruction on completion of his sick leave, from Camp Meigs, Capt. IRA C. TYNDALL, Berlin. For instruction, Lieut. EUGENE P. COWGILL, Mt. Ranier.

To Fort Thomas, Ky., for duty, from New York City, Lieut. HENRY E. AUSTIN, Baltimore.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Capt. CHARLES C. BUCKNER, Baltimore.

To New Orleans, La., for instruction, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, from Fort Oglethorpe, Lieut. CLARENCE M. REDDIG, Baltimore.

To New York City, Cornell Medical College, for instruction, from Camp Dodge, Iowa. Lieut. FRANK N. HOFFMEIER, Hagerstown.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Hoboken, N. J.*, for duty, from Camp Joseph E. Johnston, Fla. Lieut. HEVANNESS K. PELREKIAN, Baltimore.

Massachusetts

To Baltimore, Md., Johns Hopkins Medical School, for temporary duty, Capt. JAMES B. AYER, Boston.

To Camp Custer, Battle Creek, Mich., for duty, from Camp Custer, Capt. OSCAR L. SPENCER, Lynn.

To Camp Devens, Ayer, Mass., base hospital, Major JOHN J. DOWLING, Boston. Base hospital, and on completion *to his proper station*, from Camp Upton, Major ELLIOTT P. JOSLIN, Boston.

To Camp Dix, Wrightstown, N. J., base hospital, from New York City, Capt. ALFRED F. CHRONQUEST, Hawthorne.

To Camp Meade, Annapolis Junction, Md., *Camp Dix*, Wrightstown, N. J., *Camp Upton*, Long Island, N. Y., base hospitals, and on completion *to his proper station*, from Camp Devens, Major P. JOSLIN, Milford. *To Camp Meade* for conference, and on completion *to Camp McClellan*, Anniston, Ala., for duty, from Fort Slocum, Capt. WALTER J. OTIS, Waverly. Base hospital, from New York City, Lieut. BERNARD A. GODVIN, Boston.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Lieut. FRANK C. LEAVITT, Belmont.

To Cape May, N. J., for temporary duty, from Philadelphia, Lieut. CARL R. HUDSON, Boston.

To Dansville, N. Y., for duty, from Camp Custer, Lieut. MERRICK LINCOLN, Worcester.

To Fort Oglethorpe for instruction, Capt. EDWARD J. SCANNELL, Boston; from Camp Devens, Capt. PARKER N. CORT, Springfield. For instruction, Lieuts. ELIE I. LA LIBERTE, Fall River; ARTHUR A. PATTEY, Lawrence; ELISHA S. LEWIS, Princeton; EDWARD ROSEN, Revere; EDWARD H. EWING, Roxbury; HUGH L. SIMMONS, Worcester; from Army Medical School, Lieut. BURTON E. HAMILTON, West Roxbury.

To Fort Slocum, N. Y., for duty, from Boston, Lieut. CHARLES E. RODERICK, Taunton.

To Garvin City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. ARTHUR O. McLAUGHLIN, Haverhill; ROBERT C. SELLEW, Mill River; EMMETT E. LIGHT, Springfield.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. JOHN D. R. WOODWORTH, Boston; LOUIS P. SALERNO, Boston.

To Newport News, Va., for duty, Capt. JOHN FENNESSEY, Dorchester; from Fort Oglethorpe, Lieuts. CLARENCE B. LIVINGSTON, Lowell; JOSEPH J. COSGROVE, Westfield.

To Otisville, N. Y., for temporary duty, from Camp Logan, Capt. GEORGE T. STRADY, Springfield.

To New York City, Bellevue Hospital, for instruction, and on completion *to Walter Reed General Hospital*, Takoma Park, D. C., for temporary duty, Lieut. GEORGE W. BLOOD, Fall River.

To Philadelphia, Pa., for instruction and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital, Lieut. EZEKIEL PRATT, Arlington.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Brooklyn, N. Y., Lieut. DANIEL J. SULLIVAN, Boston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. JOHN M. MALONEY, Springfield.

Michigan

To Army Medical School for instruction, Lieuts. EDWARD S. HUNTRESS, Jr., ZINA B. BENNETT, LAWRENCE N. HOST, Detroit; FRANK V. CARNEY, St. Clair.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Capt. LOUIS W. YERKES, Rh. Rapids.

To Camp Meade, Annapolis Junction, Md., base hospital, and on completion *to his proper station*, from Camp Upton, Major NELLID B. FOSTER, Ann Arbor.

To Camp Talaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieuts. WILLIAM E. DORAN, Calen; PAUL M. CLIFFORD, Detroit.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Capt. LOUIS R. CHAMBERLIN, Grand Rapids.

To Corpus Christi, Texas, for duty, from Camp Gordon, Lieut. BERNARD FRIEDLAENDER, Schenwing.

To Dansville, N. Y., for duty, from Camp Devens, Lieut. BRUNO J. SAWICKI, Detroit.

To Fort Des Moines, Iowa, for duty, from Camp Dodge, Capt. WALTER S. SHARPE, Dowagiac.

To Fort Oglethorpe for instruction on completion of instruction at Evans Hospital Institute, Philadelphia, Capt. NELSON MACARTHUR, Detroit. For instruction from Camp Custer, Capt. WILLIS E. CHAPMAN, Cheboygan. For instruction, Lieuts. FRED H. BLANCHARD, WILLIAM Y. KANE, HENRY R. LEIBSINGER, Detroit; WILLIAM L. BRIDGE, Hancock. Hospital from Camp Custer, Lieut. JOHN E. HESLOP, Edenville; ELIHU A. MARTINDALE, Hillsdale.

To Fort Riley, base hospital, Lieut. CLYDE L. D. McLAUGHLIN, Vermontville. For duty, from Fort Riley, Lieuts. LADISLAUS R. KAMINSKI, Detroit; ANDREW J. DINSMORE, White Pine Mine.

To Garvin City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. RICHARD F. BOONSTRA, Detroit.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. JOHN J. McCORMICK, Jackson; Lieut. HENRY J. PYLE, Zeeland.

To Washington, D. C., for duty in the Surgeon General's Office, on completion of instruction at Philadelphia, Capt. GROVER O. PEMBERTHY, Detroit.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. RICHARD C. LYLE, Bridgeport.

Minnesota

To Army Medical School for instruction, Lieuts. JOHN W. BELL, NORTON T. JOHNSON, RUSSELL E. OLSON, Minneapolis; JOSEPH W. JESSON, ARTHUR E. MARK, St. Paul; CHARLES F. SNELL, Twin Valley.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. CHARLES D. RICHMOND, Jeffers.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM J. McKILLIP, Duluth.

To Camp Talaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. THOMAS F. McCORMICK, Minneapolis.

To Fort Oglethorpe for duty, from Camp Pike, Lieut. THOMAS G. CLEMENT, Vernon Center.

To Fort Riley for instruction, Lieuts. GUSTAF T. NORDING, BENJAMIN J. SHALETT, Minneapolis.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. SAMUEL R. PRAKER, Cass Lake.

To Washington, D. C., for duty in the Surgeon General's Office, from Fort Oglethorpe, Capt. WILLIAM M. CHOWNING, Minneapolis.

Mississippi

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. ALFRED L. LEWIS, Natchez.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. LEE K. MAYFIELD, Inverness.

To Fort Oglethorpe for duty, from Rockefeller Institute, Lieut. SWINTON E. LANE, Scott. For instruction, Lieuts. EDWARD C. ABERNETHY, Algoma; HUGH W. PRIDDY, Charleston; THOMAS F. BEROVITCH, ROBERT L. PEYTON, Jackson; JAMES H. SLAUGHTER, Plattsburg; from duty as a private at Camp Beauregard, Lieut. SAMUEL H. WOOD, Plattsburg

Honorably discharged on account of physical disability incurred in line of duty, Capt. WALTER R. McKINLEY, Columbus.

Resignation of Lieut. TIMOTHY D. WELCH, Ellisville, accepted.

Missouri

To Army Medical School for instruction, Lieuts. BURTON MALTBY, Liberty; GULPH W. GROVE, Sedalia.

To Augusta, Ga., base hospital, from Fort Oglethorpe, Capt. ROBERT E. SCHLUTER, St. Louis.

To Austin, Texas, State University, for duty, from Austin, Lieut. JOHN E. TIMBERMAN, Marston.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Lieut. ALFRED W. HARRISON, Warrensburg.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. LINUS M. RYAN, Cole Camp.

To Camp Greene, Charlotte, N. C., base hospital, from Philadelphia, Lieut. CHARLES H. SHUMAKER, St. Louis.

To Camp Jackson, Columbia, S. C., *Camp Lee*, Petersburg, Va., *Camp Greene*, Charlotte, base hospitals, from Camp Wadsworth, Major LLEWELLYN SALE, St. Louis.

To Camp John Wise, San Antonio, Texas, for duty, from Camp Shelby, Lieut. MAURICE R. WILLIAMSON, St. Louis.

To Camp Lewis, American Lake, Wash., for duty, from Fort Riley, Lieut. OTTO E. ROHRFELD, Lathrop.

To Camp Logan, Houston, Texas, for duty, from Fort Riley, Lieut. WILLIAM C. BRADLEY, St. Louis.

To Camp Pike, Little Rock, Ark., for duty, from Fort Riley, Lieut. MITCHELL H. SHELBY, Charleston.

To Camp Talaferro, Fort Worth, Texas, for duty, from Fort Riley, Capt. CHARLES ALFRED SMITH, Osceola; Lieuts. LEWIS H. LONG, Denver; LEWIS C. CALVERT, Weston.

To Chicago, Ill., for duty, and on completion *to his proper station*, Major FREDERICK W. BAILEY, St. Louis. Presbyterian Hospital, for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. LUDWIG G. MUENCH, St. Louis. On completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. JOHN W. HALLBERG, Kansas City.

To Dallas, Texas, for duty, from Fort Riley, Capt. FRANCIS M. VESSELLS, Perryville.

To Dansville, N. Y., for duty, from Camp Dix, Capt. ELBERT J. LEE, Jr., St. Louis; from Fort Riley, Lieut. EUGENE D. McCARTHY, St. Louis.

To Fort Leavenworth, Kan., for duty, from Fort Riley, Lieut. JASPER LE R. ATHERTON, Springfield.

To Fort McPherson, Ga., base hospital, Lieut. JOSEPH W. KIMBERLIN, Kansas City. From Fort Yellow Stone, Wyo., Lieut. CLARENCE E. ERNEST, Kansas City.

To Fort Oglethorpe for instruction, and on completion *to his proper station*, from Camp Shelby, Capt. EDWARD L. COOLEY, St. Louis. For instruction, Lieut. TRENTIS V. MILLER, Sikeston.

To Fort Riley for instruction, Capt. ALFRED M. CANAWAY, Albany; WILLIAM I. FULTON, Mt. Vernon; WARREN W. BLAND, Vandalia; Lieuts. EDWARD E. ROBINSON, Adrian; EDWARD FORD, Bloomfield; WILLIAM O. FINNEY, Chaffee; WILLIAM J. SHELTON, Van Buren; LOUIS E. ROLEMS, Dixon; EDWIN E. WHITESIDE, Elvins; THOMAS A. GRACE, Excelsior Springs; HERBERT R. BOOTH, Hamilton; MILLER C. COOMBS, Joplin; RICHARD B. PLATTS, Kansas City; THOMAS H. EGBERT, Kennett; PERCY C. NEUNLIST, Old Monroe; HIRAM S. WINTERS, Oran; EDGAR A. SNYDER, Rushville; THOMAS J. WILKINS, Troy; HENRY A. MEYERS, Sedalia; GEORGE W. H. PRESNELL, Sikeston; LEVI S. LONG, St. Joseph; JOSEPH M. BLAKEMORE, St. Louis; BURR H. EMERSON, Stockton; CADWALLADER H. ATCHISON, Waldron; from Camp MacArthur, Lieuts. LEANDER J. EADS, Hamilton; ROBERT SHULTZ, Orrick; base hospital, Lieut. GEORGE F. ZACHRITZ, St. Louis. For duty, from Fort Riley, Lieut. JOHN A. KONZELMAN, St. Louis.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. ROY O. SAMPLE, Fredericktown.

To Lonoke, Ark., Signal Corps Aviation School, for duty, from Camp Pike, Lieut. PAUL B. CLAYTON, Odessa.

To Newport News, Va., for duty, from Walter Reed General Hospital, Capt. GUTHRIE K. SCRUTCHFIELD, Marshall.

To New York City, Cornell Medical College, for instruction, and on completion *to Hoboken, N. J.*, base hospital, from Camp Grant, Lieut. S. STOFER, Kansas City.

To Philadelphia, Pa., University Hospital for instruction, and on completion *to Camp Meade*, Annapolis Junction, Md., base hospital. Capt. HARRY H. SMILEY, Boonville. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. GEORGE L. RILEY, St. Louis.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Riley, Lieut. LOGAN L. LATHAM, Latham.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. WILLIAM B. McCLURE, Hale; CLAUDE J. ALLEN, Rich Hill.

Resignation of Capt. B. KURT STUMBERG, St. Charles, accepted.

Montana

To Army Medical School for instruction, Lieut. LEE S. CASSELL, Sweet Grass.

To Fort Riley, base hospital, Capt. GEORGE H. PUTNEY, Great Falls. For instruction, Lieut. EDWARD F. DIXON, Bynum.

To New York City, Bellevue Hospital, for instruction and on completion *to Camp Lee*, Petersburg, Va., base hospital, from Fort Riley, Lieut. WILLOUGHBY G. DYE, Great Falls.

To Philadelphia, Pa., University Hospital, for instruction and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. THOMAS M. MORROW, Medicine Lake.

To report by wire to the Commanding General, Western Department, for assignment to duty, Capt. WILLIAM H. BUSKIRK, Miles City.

Nebraska

To Army Medical School for instruction, Lieuts. GRIFFITH A. DE MAY, Indianola; ADIN H. WEBB, Lincoln; WILLIAM L. HOWELL, Ryannis; JOSEPH A. FURLONG, Springview.

To Atlanta, Ga., for temporary duty, from Camp Jackson, Lieut. EDWARD H. McCLEAN, Omaha.

To Camp Logan, Houston, Texas, base hospital, from Camp Logan, Lieut. FRANCIS A. WELLS, Axtell; from Camp Shelby, Lieut. PAUL A. ROYAL, Lincoln.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to his proper station*, from Camp Grant, Capt. JOHN BUIS, Pender.

To Fort Des Moines, Iowa, for temporary duty, from Omaha, Major ARTHUR C. STOKES, Omaha.

To Fort Riley for duty, from Fort Riley, Capt. HOMER DAVIS, Genoa. Base hospital, Lieuts. ARTHUR J. OFFERMAN, Omaha; LOUIS J. STORKAN, Wilber.

To Minneola, Long Island, N. Y., Signal Corps Aviation School, *for duty*, from Omaha, Lieut. CLAUDE T. UREN, Omaha.

To New York City, Cornell Medical College for instruction, and on completion *to Hoboken, N. J.*, for temporary duty, Capt. EDWARD W. BOWE, Lincoln.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Lieut. ROBERT C. PERSON, Omaha.

Nevada

To Army Medical School for instruction, Lieut. DAVID O. BEAL, Overton.

To Western Department for duty, Lieut. BRUCE H. BROWN, Midas.

New Hampshire

To Army Medical School for instruction, Lieut. EUGENE J. THERRIEN, Derry.

To Rockefeller Institute for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Capt. HOMER B. SMITH, Lancaster.

New Jersey

To Army Medical School for instruction, Lieuts. ROGER Y. FOX, Gloucester City; WALTER B. TYMESON, Orange; WILLIAM R. BITTLE, Pennington.

To Camp Dix, Wrightstown, N. J., base hospital, from Philadelphia, Capt. ANDREW J. McBRIDE, Lieut. THOMAS A. CLAY, Paterson.

To Camp Meade, Annapolis Junction, Md., *Camp Lee*, Petersburg, Va., *Camp Greene*, Charlotte, N. C., *Camp Jackson*, Columbia, S. C., base hospitals, and on completion *to his proper station*, from Camp Dix, Major JAMES S. GREEN, Elizabeth. *To Camp Meade*, base hospital, from Army Medical School, Lieut. ALFRED M. HIDWELL, Jersey City.

To Fort Oglethorpe for duty, from Fort Hamilton, Lieut. GRANT THORBURN, Newark. For instruction, Lieut. JOSEPH C. WINANS, Belleville.

To Fort Warren, Mass., for duty, from Camp Devens, Lieut. SAMUEL N. FAIRCHILD, Pennsgrove.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. HENRY P. WEBB, Elmer; NORMAN L. SHEEHE, Jersey City; JAMES M. TORRENCE, Jr., Phillipsburg.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, Capt. WILLIAM A. NORVAL, Paterson.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. EDWARD F. UZZLE, Atlantic City.

To Richmond, Va., Aviation General Supply Depot, for duty, from Camp Lee, Lieut. FRANK L. FIELD, Far Hills.

To Washington, D. C., Army Medical Museum, for duty, from Camp Dix, Lieut. JAMES F. WALLIS, Pleasantville.

To Williamsbridge, N. Y., base hospital, and on completion *to Hoboken, N. J.*, base hospital, from Fort Oglethorpe, Lieut. KENNETH E. McCARTHY, Jersey City.

Honorably discharged, Lieut. LOUIS J. ZAUDERER, Hillside.

New Mexico

To Fort Riley for instruction, Lieut. EUGENE W. FISKE, Santa Fe.

New York

To Army Medical School for duty, from Army Medical School, Lieut. RAY S. NELSON, New York City. For instruction, Lieuts. THOMAS F. WELDON, BEVERLY E. WELLFORD, Brooklyn; PERCY H. AUSTIN, Castletown; RALPH J. LEVY, New York City; ARTHUR G. RODGERS, Jr., Poughkeepsie.

To Boston, Mass., for duty, and on completion to his proper station, Capt. C. BURNS CRAIG, New York City.

To Camp Beauregard, Alexandria, La., base hospital, from Camp Dix, Major THOMAS W. HASTINGS, New York City.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. MOSES M. FEINBERG, New York City.

To Camp Dix, Wrightstown, N. J., as division tuberculosis specialist from Camp Sherman, Major CONSTANTINE L. BJERRING, Brooklyn. Base hospital, and on completion *to his proper station*, from Camp Upton, Major DAVID BOVAIRD, New York City. Base hospital, from New York City, Lieuts. HUGO A. SIEBENSICHEN, HYMAN I. TEPERSON, New York City.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. DAVID R. MELLEN, Rochester; from Fort Oglethorpe, Lieut. GARRETT N. BANKER, New York City.

To Camp Grant, Rockford, Ill., base hospital, from Fort Riley, Capt. WALTER P. BLISS, New York City.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieuts. WALTER G. H. PUTT, CLARENCE E. TOSHBACH, New York City; GUY GRANGER, Sherman.

To Camp Lee, Petersburg, Va., *Camp Greene*, Charlotte, N. C., *Camp Wadsworth*, Spartanburg, S. C., base hospitals, and on completion *to his proper station*, from Camp Jackson, Major WILLIAM W. HERRICK, New York City.

To Camp McClellan, Anniston, Ala., for duty, from Camp McClellan, Capt. HAROLD D. BREWSTER, New York City.

To Camp Meade, Annapolis Junction, Md., base hospital, from Army Medical School, Lieut. JOHN L. EVERLOF, New York City.

To Camp Pike, Little Rock, Ark., for duty, from Camp Pike, Lieut. JOHN MILLER, New York City; from Fort Oglethorpe, Lieut. EDWARD M. SMITH, New York City.

To Camp Sevier, Greenville, S. C., *Camp Wheeler*, Macon, Ga., *Camp Gordon*, Atlanta, Ga., base hospitals, and on completion *to his proper station*, from Camp Hancock, Major FREDERICK J. BARRETT, Buffalo. For temporary duty, and on completion *to his proper station*, from Camp Gordon, Capt. JOHN J. HUGHES, New York City.

To Camp Taliaferro, Fort Worth, Tex., for duty, from Camp MacArthur, Major ARTHUR G. COUMBE, Mineola.

To Camp Upton, Long Island, N. Y., for duty, from Camp Upton, Capt. DAVID W. OVERTON, New York City. Base hospital, from Philadelphia, Capt. GEORGE E. MAURER, New York City.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Chicago, Lieut. JAMES F. TRIMBLE, New York City.

To Dansville, N. Y., for duty, from Camp Devens, Capt. EDWARD G. CLIFTON, New York City.

To Fort Hamilton, N. Y., and on completion to Fort Hancock, N. J., for duty, from Camp Upton, Lieut. EDWIN F. SAMPSON, New York City.

To Fort Leavenworth, Texas, for duty, from Camp Beauregard, Capt. JOSEPH W. MOORE, Beacon.

To Fort Mc Pherson, Ga., for temporary duty, from Army Medical School, Lieut. EDMUND C. MOHR, New York City.

To Fort Monroe, Va., for duty, from New York City, Lieuts. JOHN E. DUNNINGTON, DAVID D. STOWELL, New York City.

To Fort Oglethorpe for instruction, from Camp Sheridan, Capt. A. L. BENEDICT, Buffalo. For instruction Lieuts. DAVID M. GARDNER, Benson Mines; ISIDOR R. BLACK, SAMUEL LEWIS, FREDERICK WASHNITZER, NATHAN WEINBERG, Brooklyn; SAMUEL GRONSTEIN, FREDERICK E. STROZZI, Buffalo; HAROLD C. HAVILAND, Hudson Falls; JOSEPH C. CARNISS, ABRAHAM KOGUT, CHARLES L. McEVEETY, SIMON MENCHER, GEORGE W. MITCHELL, AARON M. MORGENLANDER, MILTON SCHAIF, IRVING S. STARTZ, New York City; DAVID T. BREWSTER, Jr., Poughkeepsie; THOMAS J. GOUNDRY, ABRAHAM LEBENDIG, Rochester; JOSEPH E. McCARTY, Watertown; from Fort Oglethorpe, Lieut. EDWARD N. PACKARD, Saranac Lake.

To Fort Porter, N. Y., for temporary duty, Lieut. BARTON E. HAUENSTEIN, Buffalo.

To Fort Riley, base hospital, from Brooklyn, Major CHARLES D. NAPIER, Brooklyn, for duty, from Fort Riley, Capt. JAMES H. McCORT, Sag Harbor.

To Fort Warren, Mass., for duty, from Camp Devens, Lieuts. HERMAN JUDKOWITZ, New York; CLYDE D. OATMAN, Poolville.

To Fort Worth, Texas, Signal Corps Aviation School, for duty, from Boston, Capt. WILLIAM W. LAING, Brooklyn.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieuts. PAUL S. JENKINS, HERMAN LEVISON, VINCENT W. WEISS, New York City; GEORGE BIBBY, Pottersville.

To Hoboken, N. J., for duty, from Camp Lee, Capt. MILLARD F. SHAFER, Cobles Kill; from Fort Oglethorpe, Capt. FREDERICK TERWILLIGER, Spencer; Lieuts. HERMAN GROSSMAN, Brooklyn; BENJAMIN NOCHILLA, JACOB URDANG, New York City.

To Houston, Texas, Ellington Field, Signal Corps Aviation Camp, for duty, from Camp Logan, Capt. GEORGE W. BEEBE, St. Johnsville.

To Ithaca, N. Y., Cornell University, for duty, from Ithaca, Capt. SAMUEL A. MUNFORD, Ithaca.

To Mineola, Long Island, N. Y., for duty, Lieut. HENRY R. SKEEL, New York City.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. DAVID MATUS, HYMAN DANISH, Brooklyn; EMILE F. NAEF, New York City.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe Lieut. ADOLPH A. WEISS, New York City. On completion *to Williamsbridge, N. Y.*, for temporary duty, from Fort Oglethorpe, Lieut. WILLIAM B. RYAN, Jr., New York City.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Oglethorpe, Lieut. HAROLD TRAYNOR, Brooklyn.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. CLAUDE MORE, New York City. On completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. DANIEL N. LYNCH, New York City; from Fort Riley, DAVID M. NATANSON, New York City.

To Rockefeller Institute for duty, Lieut. HERBERT D. TAYLOR, New York City. For instruction, and on completion *to Annapolis Junction, Md.*, base hospital, from Army Medical School, Lieut. HAROLD J. McDONALD, Buffalo.

To Washington, D. C., for duty, from Camp Meade, Lieut. WILLIAM G. PHILLIPS, Jr., Brooklyn.

To Williamsbridge, N. Y., for duty, from Newport News, Major MENUS S. GREGORY, New York City. From Camp Dix, Capt. ARTHUR M. DANE, New York City.

Honorably discharged, Lieut. GEORGE D. VON DEYLEN, New York City. On account of physical disability existing prior to entrance into the service, Lieut. LOUIS B. COHEN, Brooklyn.

North Carolina

To Camp Devens, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. RALPH L. DANIELS, Goldsboro.

To Camp Hancock, Augusta, Ga., base hospital, from Philadelphia, Capt. JACOB H. SHUFORD, Hickory.

To Camp Sevier, Greenville, S. C., base hospital, from Philadelphia, Lieut. SAMUEL B. STURGIS, Lenoir; from Rockefeller Institute, Lieut. JAMES C. BRASWELL, Jr., Wilson.

To Fort Oglethorpe for instruction, from Fort Oglethorpe, Capt. THOMPSON FRAZER, Asheville. For instruction, Lieuts. JOHN G. RICH, Candler; JOE A. HARTSELL, Concord; STEPHEN J. HAWES, Dover; EVERETT A. LIVINGSTONE, Gibson; EVANDER

McN. McIVER, Jonesboro; CLARENCE L. WILSON, Lenoir; ERNEST L. ENGLISH, Rosman; JOHN F. NASH, CLAUDE T. POOLE, St. Paul; ERNEST L. DAMERSON, Star; JAMES E. A. SISKE, Troy; MURRAY P. WHICHARD, Tynor; LEMUEL E. GUION, Waxhaw; HENRY B. MAXWELL, Whiteville.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. LUCIUS V. DUNLAP, Albemarle.

To Greensboro, N. C., for duty, and on completion *to Fort McPherson, Ga.*, for temporary duty, Major FREDERIC M. HANES, Winston-Salem.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. CHARLES H. LUPTON, New Bern.

To Philadelphia, Pa., for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, Lieut. JOSEPH C. VAUGHAN, Rich Square.

North Dakota

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. WILLIAM F. MAERTZ, Lidgerwood.

To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. CECIL C. SMITH, Stanton.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Zachary Taylor*, Louisville, Ky., base hospital, from Fort Riley, Capt. JOHN C. COUNTRYMAN, Grafton.

To Fort Riley for instruction, Lieut. MARTIN D. WESTLEY, Cooperstown.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieuts. AXEL OFTEDAL, Karpe; THOMAS L. De PUY, Jamestown.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieut. OLIVER B. SIMON, Tioga.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Riley, Lieut. HUGO MELLA, Bismarck.

Ohio

To Army Medical School for instruction, Lieuts. AUSTIN R. EDWARDS, Chatfield; BYRON H. MELIANS, Cincinnati; RAY H. MOUSER, Latty; WILLIAM F. GAINE, Willoughby.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. IRVIN W. MAYBERRY, Scott Town.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. JESSE GRIM, Akron.

To Camp Meade, Annapolis Junction, Md., for temporary duty, and on completion *to his proper station*, from Camp Custer, Major FRANK D. FERNAU, Dayton.

To Cincinnati, Ohio, for duty, and on completion *to his proper station*, from Army Medical School, Major ROBERT D. MADDOX, Cincinnati.

To Dallas, Texas, for duty, from Fort Riley, Capt. LEROY FAST, Paulding; Lieut. J. CRAIG BOWMAN, Upper Sandusky.

To Fort Oglethorpe for instruction, Capts. WILLIAM E. RUBBELL, Elyria; JOHN M. FIRMIN, Findlay; CHARLES P. SELLERS, Zanesville. On completion of instruction at Evans Dental Institute, Philadelphia, Capt. SIDNEY B. FOSTER, Toledo. For instruction, Lieuts. RICHARD E. AMOS, Akron; CHARLES L. HARDING, Bellevue; HAROLD E. GIBSON, Blanchester; JOSIAH S. STEINER, Bluffton; JESSE E. THOMPSON, Bristolville; JAMES W. LONG, Bryan; CHARLES E. SULLIVAN, Burkettsville; JOSEPH L. TODD, Canton; JACOB B. FALK, RAYMOND E. GASTON, LEWIS W. HEIZER, NATHAN B. KELLER, EDWIN R. McGRATH, NEIL E. TAYLOR, Cincinnati; FERDINAND F. HAAS, CAMPBELL F. G. NORLIN, LEONARD R. RAVITZ, ARCHIBALD A. SOUTHWICK, PARNELL SOUTHWICK, ROBERT L. THOMAS, Cleveland; JAY C. KEISER, JOSEPH A. TURNER, Columbus; NEVILLE H. McNERNEY, Corning; JAMES G. SMAILES, Coshocton; RALPH R. HARRIS, Crestline; ALFRED W. BALSLEY, Findlay; WILLIAM A. LIPSHUTZ, Fort Recovery; WILLIAM R. DERMER, Fremont; JOSEPH B. McHENRY, Hanoverton; ALBERT F. KUHL, Huron; OSCAR H. HENNINGER, Ironton; HAROLD C. MESSENGER, Xenia; RAYMOND C. SCHUETTE, Kenton; SAMUEL E. FINDLEY, Mansfield; ROSEWELL W. COMSTOCK, Maumee; CLIFFORD P. KROHN, Milan; HARRY O. WHITAKER, New Burlington; JAMES W. REESE, New London; RUSSELL A. PEASE, North Ridgeville; OTTO J. OWENS, Ottawa; ORLYN WISEMAN, Pedro; GEORGE W. LEWIS, Pierpont; WILLIAM J. FRANCIS, Ralids; GLEN NISLEY, Selden; JAMES C. BERRY, Shelbyville; SQUIRE S. BEVERLY, Toledo; JAMES W. SALISBURY, West Toledo; WALTER C. ROLLER, Willshire; FRANCIS E. REED, Wren.

To Fort Riley, base hospital, Lieut. CLOYD F. WHARTON, Akron. For duty, from Camp Doniphan, Lieut. JOHN C. GEORGE, Rockland.

Fort Worth, Texas, for duty, from Camp Grant, Lieut. EDWIN G. SCHWARTZ, Cleveland.

To Houston, Texas, Signal Corps Aviation School, for duty, from Fort Riley, Lieut. FRANCIS T. GALLEN, Columbus.

To New Orleans, La., for instruction, and on completion *to his proper station*, from Camp Beauregard, Lieut. ZALMAN O. SHERWOOD, Geneva.

To Newport News, Va., for duty, from Camp Sherman, Capt. CHARLES C. CROSBY, Ashtabula; from Fort Oglethorpe, Capt. THOMAS FOSTER, Wooster.

To New York City for instruction, and on completion to Camp Lee, Petersburg, Va., base hospital, Capt. NATHANIEL M. JONES, Cleveland.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. BRYCE A. MILLER, Amherst.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Lieut. JOHN H. NICHOLS, Columbus.

Honorably discharged on account of physical disability existing prior to entrance to service, Lieut. JUSTIN G. BALLOU, Graytown.

Oklahoma

To Army Medical School for instruction, Lieuts. JOHN G. THOMAS, Alluwe, FINIS E. RUSHING, Coalgate; CHARLES E. THOMPSON, Enid; JARRETT J. BLINGTON, Enterprise; EDMOND E. GALLAGHER, Lawton; CHARLES P. MURPHY, Red Rock; CHARLES C. ROSE, Stringtown.

To Camp Grant, Rockford, Ill., for duty, from Fort Riley, Lieut. CECIL B. SHROUT, Shawnee.

To Camp Lee, Petersburg, Va., for duty, from Fort Riley, Capt. WILLIAM E. HARRINGTON, Wakita.

To Camp Meade, Annapolis Junction, Md., for duty, from Fort Riley, Capt. GUY B. VANSANDT, Wewoka.

To Fort Riley, base hospital, Lieuts. WILLIAM E. SIMON, Alva; ELIJAH S. SULLIVAN, Oklahoma City. For instruction, Lieut. MARION McD. WEBSTER, Stratford; from Camp MacArthur, Lieut. WILLIAM A. L. COSSEY, Prague.

To Laurel, Md., for duty from Fort Oglethorpe, Lieut. JAMES E. ADAMS, Chandler.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieut. HUBERT W. CALLAHAN, Collinsville.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, base hospital, from Fort Riley, Lieut. WALKER R. MARKS, Vinita.

To Rockefeller Institute for instruction, and on completion *to Camp MacArthur*, Waco, Texas, base hospital, from Philadelphia, Major ROBERT M. HOWARD, Oklahoma City.

To Wilbur Wright Field, Fairfield, Ohio, Signal Corps Aviation School, for duty, from Fairfield, Capt. ABRAHAM L. HAZIN, Newkirk.

Oregon

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. HUGH S. McKENZIE, Fossil.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Fort Riley, Lieut. GEORGE E. LOW, Coquille.

To Fort Riley base hospital, Lieut. JOHN B. DINSMORE, Oreneo.

To Rockefeller Institute for instruction, and on completion *to Fort McHenry*, Baltimore, Md., for temporary duty, from Philadelphia, Capt. THOMAS M. JOYCE, Portland.

To Western Department for assignment to duty, Capt. THOMAS H. MILLER, Eugene; Lieut. HORACE L. ROSENBERG, Portland.

Pennsylvania

To Army Medical School for instruction, Lieuts. GEORGE C. WEBSTER, Jr., Chester; ARCHIE N. McCONNELL, Falls Creek; LLOYD E. WURTSTER, Linden; DAVID J. HAWK, Tower City; ROBERT C. HUGHES, Tredyffrin.

To Camp Beauregard, Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. JACOB W. E. ELLENBERGER, Wilkinsburg.

To Camp Dodge, Des Moines, Iowa, base hospital, from Philadelphia, Major ELIJAH H. SITER, Philadelphia, as tuberculosis specialist; from Fort Oglethorpe, Lieut. WILLIAM W. WOODS, Mont Alto.

To Camp Gordon, Atlanta, Ga., as tuberculosis specialist, from Camp Gordon, Lieut. AUGUSTUS N. EGGERS, Pittsburgh.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieuts. JOHN M. STEWART, Marion Center; CHARLES O. W. BARTINE, Philadelphia.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. THOMAS M. STAHLMAN, Pittsburgh.

To Camp John Wise, San Antonio, Texas, for duty, from Camp Wheeler, Lieut. JAMES B. CARROLL, Dunbar; from Camp Zachary Taylor, Lieut. CLARENCE H. KETTERER, Butler.

To Camp MacArthur, Waco, Texas; *Camp Travis*, Fort Sam Houston, Texas; *Camp Logan*, Houston, Texas; *Camp Beauregard*, Alexandria, La., base hospitals, and on completion *to his proper station*, from Camp Bowie, Major JOHN S. RODMAN, Philadelphia. *To Camp MacArthur*, for duty, from Camp Taliaferro, Major WALTER S. CORNELL, Philadelphia.

To Camp McClellan, Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE A. BROWN, Philadelphia.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade, Lieut. JOHN G. KNAUER, Reading.

To Camp Sevier, Greenville, S. C., base hospital, from Fort Oglethorpe, Major WILLIAM C. LeCOMPTE, Bristol.

To Camp Sheridan, Montgomery, Ala., base hospital, Lieut. ROBERT T. HOOD, Pittsburgh.

To Camp Wheeler, Macon, Ga., base hospital, from Camp Wheeler, Lieut. WALTER M. BERTOLET, Reading.

To Chicago, Ill., Presbyterian Hospital, for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, from Fort Oglethorpe, Lieut. JOHN P. DUGGAN, Pittsburgh.

To Fort McHenry, Md., for instruction and on completion *to his proper station*, from Aberdeen, Capt. JAMES L. JUNK, Connellsville.

To Fort Oglethorpe for instruction, Capts. EDWARD L. DAVIS, Berwick; EVAN O'N. KANE, Kane; ROY E. SLEPPY, Library; Lieuts. ALBERT F. DUNSBORO, Barnesboro; HARVEY W. WOODS, Blain; ARNE W. CLOUSE, Geneva; PIUS A. NOLL, Glen Rock; HENRY N. SCHOLL, Kulpsville; JAMES L. HEARD, North East; SIMSON D. BASHORE, Reading; JOHN PUDDY, JOSEPH H. SCHOENFELD, LOUIS SEGAL, MORRIS SEGAL, JAMES F. TOMPKINS, GEORGE B. WALP, JOSEPH A. WARK, Philadelphia; JOSEPH S. BAIRD, Pittsburgh; WILLIAM McGRANOR, Port Allegany; GEORGE W. GETZE, Tarentum; BOYD WILKINSON, Trenton; CHARLES D. BIERER, Uniontown; XAVIER K. COLLMANN, Wilkes-Barre; BART. J. SMITH, Windber; GEORGE H. B. TERRY, Wyalusing. On completion of instruction at Evans Dental Institute, Philadelphia, Lieut. FRANCIS S. CHAMBERS, Easton. For instruction and on completion *to Cape May, N. J.*, for temporary duty, from Philadelphia, Lieuts. JOHN H. ARNETT, JOHN ALEXANDER, Philadelphia; FRANK R. BAILEY, Pittsburgh.

To Fort Riley for duty, from Fort Riley, Lieut. CHARLES S. ABBOTT, Bradford.

To Fort Sam Houston, Texas, base hospital, from Camp Stanley, Capt. CARSON COOVER, Harrisburg.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. MELVILLE M. PALMER, Homer City.

To Hoboken, N. J., for duty, from Army Medical School, Lieut. FRANKLIN C. BRUSH, Philadelphia; from Camp Jackson, Lieut. WILLIAM D. GATES, Indiana; from Fort Oglethorpe, Lieut. HUBERT J. GOODRICH, McKees Rock.

To Ithaca, N. Y., Cornell University, for duty, from Ithaca, Lieut. EDWARD R. SIBLEY, Elkins Park.

To Mineola, Long Island, N. Y., Signal Corps Aviation School, for duty, from Philadelphia, Capt. JOHN P. GALLAGHER, Philadelphia; from San Antonio, Capt. ROBERT J. HUNTER, Philadelphia.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. DANIEL BOHN, Altoona; CHARLES B. YOSE, Bloomsburg; HARRY W. LYONS, Fairview; SAMUEL ITSCOITZ, McKeesport; SAMUEL CHARTOCK, Philadelphia; CHARLES E. NICHOLSON, Pittston.

To New York City, Bellevue Hospital, for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Capt. ANDREW GODFREY, Ambler. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut.

JOHN J. NEAL, Philadelphia. On completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieuts. ALBERT J. STORM, Philadelphia, WILLIAM W. WOODWARD, West Chester. *Neurological Institute*, for duty, from Camp Lee, Lieut. NATHANIEL W. WINKELMAN, Budgeville.

To Philadelphia, Pa., for duty, and on completion *to his proper station*, from Camp Lee, Capt. STEPHEN W. TUNNELL, Philadelphia. For instruction and on completion *to Fort Oglethorpe*, for temporary duty, from Camp Meade, Lieut. ROBERT McR. BIDDLE, Ashland.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sevier*, Greenville, S. C., base hospital, from Fort Riley, Lieut. JAMES H. EVANS, Pittsburgh.

To Rochester, Minn., for instruction, and on completion *to Camp Dodge*, Des Moines, Iowa, base hospital, from Fort Oglethorpe, Lieut. JAMES W. BODLEY, Philadelphia. On completion *to Camp Grant*, Rockford, Ill., base hospital, Lieut. THOMAS SCHUBB, Pittsburgh.

To West Point, Miss., for duty, from Dallas, Lieut. RAY N. LEWIS, Anello.

To Williamsbridge, N. Y., for duty, Lieut. HENRY WILDERMAN, Philadelphia; from Rockefeller Institute, Lieut. ALLEN W. SIVYER, Philadelphia.

To the inactive list, from Army Medical School, Lieut. HAROLD F. LANSHE, Allentown.

Porto Rico

To Camp Las Casas, San Juan, Porto Rico, for duty, from San Juan, Capt. LUIS G. DEQUEVEDO, Cagnas.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. MANUEL D. GARCIA, Barceloneta.

Rhode Island

To Camp McClellan, Anniston, Ala., base hosptial, Capt. WILLIAM H. DYER, Providence.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. WILLIAM W. CUMMINGS, Providence.

To Fort Oglethorpe for instruction, Lieuts. JOSEPH L. BELLIOTTI, ALFRED A. CALDARONE, TANCREDI C. GRANATA, Providence.

South Carolina

To Army Medical School for instruction, Lieuts. ROBERT V. ACKERMAN, Ridgeville; ROY DeW. SUMNER, Rion.

To Fort Oglethorpe for instruction, Major CLARENDON W. BARRON, Columbia; Lieuts. CHARLES E. LYDAY, Abermarle; CONNOR J. MILLER, Cottageville; JAMES C. PEPPER, Easley; WILLIAM C. WILLIAMS, Ja., Hones Path; ALLSTON E. WILLCOX, Roemish.

To Philadelphia, Pa., University Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. HILLAND S. THOMAS, Chester.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. CHARLES P. BENSON, Travellers Rest.

To Williamsbridge, N. Y., for duty, from Fort Oglethorpe, Lieut. LADSON D. BOONE, Rowesville.

South Dakota

To Fort Riley for duty, from Fort Riley, Lieut. ROBERT J. QUINN, Burke.

To Rochester, Minn., for instruction, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Camp Cody, Major JAMES A. MATTISON, Hot Springs. On completion *to Camp Dodge*, Des Moines, Iowa, base hospital, Lieut. ROBERT A. CRAWFORD, Chamberlain.

To Rockefeller Institute for instruction, and on completion *to Williamsbridge, N. Y.*, for temporary duty, from Fort Riley, Lieut. JOHN C. ROGERS, White Lake.

Tennessee

To Army Medical School for instruction, Lieuts. WALTER J. JOHNSON, Frankewing; SHIELDS ABERNATHY, Memphis; ARA D. SHARP, Murfreesboro.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. LEOPOLD SHUMACKER, Chattanooga.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. EMMETT E. BYRD, Jonesboro.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Lee, Lieut. MARCUS C. SPINGARN, Memphis.

To Fort Bliss, Texas, base hospital, from Camp Dix, Lieut. THOMAS C. CHAIN, Brownsville.

To Fort Oglethorpe for instruction, Capt. MARVIN A. BLANTON, Union City; Lieuts. LOUIS A. EDMUNDSON, Bethel; HENRY G. EDMONDSON, Braxton; ELI M. DELAY, Chattanoogs; ALFRED L. GRIFFIN, Ripley; WILLIAM W. WINTERS, Greenbrier; FRED AL. NEERGAARD, Harriman; BARNIE L. McDONALD, Idol; JAMES P. CARTER, SAMUEL L. EDWARDS, CHESTER T. WATERS, Memphis; GEORGE W. HOLCOMB, Nashville; JOHN E. HAMPTON, Newport; HARRY M. WESTOVER, Pinson CLYDE RUSSELL, Sandwell; EARL B. CARR, Tazewell; KUEBEL A. BRYANT, Trenton; HAROLD A. FLETCHER, South Chattanooga.

To Fort Riley for instruction, Lieut. VIRGIL E. MASSEY, Knoxville.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. GREEN W. McCONATHY, Eads.

To Fort Screven, Ga., for temporary duty, from Fort McPherson, Lieut. CHARLES D. BLASSINGAME, Memphis.

To Minesola, Long Island, N. Y., for duty, from Memphis, Capt. LOUIS LEVY, Memphis.

To New Orleans, La., for instruction and on completion *to Camp Beauregard*, Alexandria, La., base hospital, Lieut. WILLIAM A. HOWARD, Cookeville.

To Newport News, Va., for duty, Lieut. EMMETT R. HALL, Memphis; from Fort Oglethorpe, Lieuts. HOWARD A. IJAMS, Knoxville; JAMES E. CARSON, Maryville; JAMES D. LESTER, Nashville.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, Capt. CHARLES L. GOODRICH, Fayetteville. On completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. BENJAMIN D. WRIGHT, Memphis.

To Pittsburgh, Pa., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, from Fort Oglethorpe, Capt. WILLIAM F. CLARY, Memphis.

Resignation of Capt. JOSIAH B. HIBBITTS, Union City, accepted.

Texas

To Army Medical School for instruction, Lieuts. ROY L. VINEYARD, Amarillo; THOMAS W. GLASS, Austin; FRANK P. MILLER, Bells; ROY C. GILES, Belton; WILLIAM C. FISHER, Ja. Galveston; KARL A. ANDERSON, Hillsboro; THOMAS L. GOODNIGHT, Holland; JOHN B. BALDWIN, Marshall; WILLIAM W. DAVIS, Memphis; JAMES A. BLEDSOE, Port Arthur.

To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. CALVIN W. DAVIS, Long View.

To Camp Cody, Deming, N. M., for temporary duty, and on completion *to his proper station*, from Fort Sam Houston, Lieut. RICHARD C. CURTIS, Temple.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. JAMES S. MARSHALL, Blossom.

To Camp Logan, Houston, Texas, for duty, from Camp Logan, Lieut. PIERRE P. HIGGINS, Fort Worth; from Fort Riley, Lieut. JOSEPH E. McDOWELL, Shamrock.

To Camp Travis, Fort Sam Houston, Texas, as tuberculosis specialist, from Kelly Field, Capt. CHARLES McC. HENDRICKS, El Paso.

To Camp Upton, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. THOMAS C. LIDDELL, El Paso.

To Fort Bayard, N. M., for duty, Lieut. ROYAL S. LOVING, Dallas.

To Fort McPherson, Ga., for duty, from Fort Sam Houston, Lieut. DIMETRUS J. LOUIS, El Paso.

To Fort Oglethorpe for instruction, Capt. JOSEPH H. SHELTON, Kingsville; Lieuts. HERSHALL LAFORGE, Kinsbury; EDMUND D. NEER, Sherman.

To Fort Riley for instruction, from Camp MacArthur, Lieut. ROBERT M. PRATHER, Buffville.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. GEORGE W. HOWARD, Dallas.

To Garden City, Long Island, N. Y., for duty, from Fort Oglethorpe, Lieut. ISAAC N. JACKSON, San Antonio.

To New Orleans, La., Charity Hospital, for instruction and on completion *to Camp Beauregard*, Alexandria, La., Lieut. COLEMAN J. CARTER, Oakwood. On completion *to Camp MacArthur*, Waco, Texas, base hospital, from Fort Riley, Lieut. MOULDON SMITH, Roby.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. JESSE P. LOCKHART, Eden; JOSHUA P. WOOD, Roane.

To New York City, Bellevue Hospital, for instruction and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. JACKSON D. MITCHELL, Fort Worth. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. WREN E. SMITH, Dallas. On completion *to Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Riley, Lieuts. WALTER L. JACKSON, Dallas; ERNEST H. HAMILTON, Kilgore.

To Rochester, Minn., for instruction and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Riley, Major CHARLES M. AVES, Houston.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM N. SCHULTZ, Georgetown.

Utah

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. GEORGE E. McBRIDE, Magna.

To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. WILLIAM R. BROWN, Ogden.

To Minesola, Long Island, N. Y., for duty, from Utah, Lieut. ROBERT R. HAMPTON, Salt Lake City.

Vermont

To Army Medical School for instruction, Lieut. LUTHER J. CALAHAN, Manchester Centre.

To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. FRANK H. EVERETT, Castleton.

To Fort Oglethorpe for instruction, Capt. NATHAN R. CALDWELL, Granby; Lieuts. LOVEJOY, Manchester Depot; WILLIAM A. FLOOD, North Bennington; ROWLEY S. FLAGG, North Troy; BERN D. COLBY, Sudbury; JOHN N. CAISSE, Swanton; SHERMAN A. COOTEY, Wallingford.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. GEORGE C. RUBLEE, Hardwick.

Virginia

To Army Medical School for instruction, Lieut. MERWIN B. MOORE, Raven.

To Camp Lee, Petersburg, Va., base hospital, from Fort Monroe, Major WILLIAM L. PEPLE, Richmond.

To Fort Monroe, Va., Aviation Section Signal Corps, from Richmond, Capt. WILLIAM W. GILL, Richmond.

To Fort Oglethorpe for instruction, Lieuts. WILLIAMSON C. WELBURN, Ballston; CHARLES B. FUGATE, Clinchport; ALFRED B. GREINER, Rural Retreat.

To Fort Ontario, N. Y., for temporary duty, Capt. GEORGE M. MAXWELL, Roanoke.

To Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WHITFIELD P. DAVIS, Galax.

To Newport News, Va., for duty, from Fort Oglethorpe, Lieuts. EARLY E. DOVELL, Hillsboro; CHARLES E. DYER, Pulaski.

To New York City, Bellevue Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Capt. EDWARD H. MILLER, Ja., Danville. On completion *to Camp Meade*, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. STEPHEN R. DONOHOE, Ja., Norfolk.

To Rockefeller Institute for instruction and on completion *to Fort McPherson, Ga.*, for temporary duty, Capt. RICHARD P. BELL, Staunton. For instruction in laboratory work and on completion *to Army Medical School*, for duty, Lieut. ALBERT P. TRAYNAM, Richmond.

Washington

To Camp Travis, Fort Sam Houston, Texas, for duty, from Camp Travis, Capt. EDWARD A. RICH, Tacoma.

To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. JO B. BLAIR, Vancouver.

To New York City, Cornell Medical Hospital, for instruction, from Fort Riley, Lieut. HAROLD B. THOMPSON, Seattle.

To Philadelphia, Pa., for instruction, and on completion *to Fort Riley* for temporary duty, from Camp Meade, Capt. JAMES G. MATTHEWS, Spokane.

To Western Department for duty, Lieuts. RAY SCHUTT, Bremerton; HARRY W. SHRYOCK, Sumas; WILLIAM W. WICK, Summer.
Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CHARLES F. ENGELS, Seattle.

West Virginia

To Belleville, Ill. Signal Corps Aviation School, for duty, from Fort Oglethorpe, Lieut. WILLIAM P. SAMMONS, Cameron.
To Camp Hancock, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. MARK E. CALDWELL, Clendenin.
To Fort Oglethorpe for instruction, Capt. PATRICK L. GORDON, Charleston; Lieuts. FINLY K. VASS, Cassaway; HENRY G. BIELER, Charleston; RUFUS M. MUSICK, Gilbert; CHARLES P. S. FORD, EDWARD G. McCLEES, Hansford; WILLIAM C. MAYS, Sharon.
To New Orleans, La., for instruction and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Jackson Barracks, Lieut. LATIMER P. JONES, Pennsboro.

Wisconsin

To Americus, Ga., for duty, from Fort Oglethorpe, Lieut. JOSEPH J. FRANCE, Milwaukee.
To Camp Bowie, Fort Worth, Texas, for duty, from Camp Bowie, Lieut. HENRY A. HALSEY, Hiles.
To Camp Cody, Deming, N. M.; *Camp Doniphan*, Fort Sill, Okla.; *Camp Bowie*, Fort Worth, Texas; *Camp Travis*, Fort Sam Houston, Texas, base hospitals, and on completion *to his proper station*, from Camp Kearny, Major JOHN R. McDILL, Milwaukee.
To Camp Dodge, Des Moines, Iowa, base hospital, Lieut. PERCY R. PIERSON, Readstown.
To Camp Taliaferro, Fort Worth, Texas, for duty, from Fort Riley, Lieut. JAMES R. HARVEY, Footville.
To Dallas, Texas, for duty, from Fort Riley, Capt. CLIFFORD W. ANDREWS, Waupaca.
To Fort Oglethorpe for instruction, Capts. WILLIAM HECKER, Beloit; BENJAMIN F. HOYT, South Kaukauna; from Pittsburgh, Capt. GENTZ PERRY, Amery.
To Fort Riley for duty, from Fort Riley, Lieut. EDWIN H. FEDEMAN, Montello. For instruction, Lieut. FREDERICK J. KORTHALS, Milwaukee.
To Fort Sam Houston, Texas, for duty, from Fort Riley, Lieut. WILLIAM F. WEINGART, Milwaukee.
To Houston, Texas, Signal Corps Aviation School, for duty from Fort Riley, Capt. PATRICK R. MINAHAN, Fond du Lac; Lieut. WILLIAM E. BUCKLEY, Hartford.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Custer*, Battle Creek, Mich., base hospital, from Camp Grant, Capt. GEORGE SENN, Green Bay.
Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HARRY A. JEFFERSON, Clintonville.

Wyoming

To Fort Riley for duty, from Fort Riley, Lieut. LUTHER E. MITCHELL, Kaycee.
To Western Department for duty, Lieut. NEIL C. GEIS, Casper.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Smallpox.—During February and March, smallpox appeared in a number of cities and counties in the state. At Birmingham there were 100 cases early in February, the disease continuing to a greater or less extent throughout the month. The disease was reported from many communities throughout the country, and many cases occurred at Goodwater and other parts of Coosa County. At present it is abating, on account of the order from the health department requiring every one to be vaccinated as an emergency measure.

New Officers.—The Coosa County Medical Association, in session at Rockford, elected the following officers: Dr. Julius Jones, Rockford, president, and Dr. Cecil K. Maxwell, Kellyton, member of the registration board.

Full-Time Health Officers.—At Florence, Lauderdale County, $7,500 has been appropriated for the maintenance of a full-time health officer, a public health nurse and other necessary employees. This makes nine Alabama counties which have complete health departments.

ARKANSAS

State News.—More than 600 cases of smallpox were reported to the state board of health during February.—— Action was taken at Fort Smith, March 7, toward the extension of the membership of the Union Hospital Association to make eligible all workers in Arkansas, Oklahoma and Texas. At the convention held at Fort Smith, a campaign was started to enlist 25,000 members in the association.—— Rules were issued by the state board of health, March 6, with reference to the control and treatment of persons with venereal disease throughout the state.——March 10, the Arkansas Public Health Association began a campaign against tuberculosis at Marianna where the first field nurse of the association started a tuberculosis survey. The state board of health, the state department of education, the University Extension organization, and the Federation of Women's Clubs are assisting.——Dr. A. B. Brokaw of the International Health Board began a survey of health conditions in the southern district of Woodruff County, March 11.

CALIFORNIA

Personal.—Dr. L. Etta Farmer, Folsom, has gone to France to do general relief work among the refugees.——Dr. Robert A. Peers, Colfax, has been assigned to the Red Cross tuberculosis service in France.

License Revoked.—At Los Angeles, February 21, the licenses of the following physicians were revoked for various reasons: Drs. Thomas F. Glass, Moses Jacobson, William S. Carr, San Francisco, and George B. Wilson, San Bernardino. The last named physician was placed on probation for one year, as the result of his connection with the case of James H. N. Wilson, known as "Weeping Eye Wilson," who was convicted in the federal courts of attempting to defraud insurance companies by false claims of injury.

Miscellaneous.—At Los Angeles, March 7, an ordinance was passed providing that all food exposed for sale must be protected by glass. The ordinance will become effective in thirty days.——A medical school for the extensive training of medical officers for the United States Army was established in San Francisco, March 15. The school is directed by the associated faculties of the medical departments of the University of California and Stanford University. Classes of from ten to fifteen Army medical officers will be detailed to the school.

COLORADO

Personal.—Dr. Ralph S. Chamberlain has been named as county physician to succeed Dr. George P. Lingenfelter, who has resigned on account of his service in the United States recruiting office at Denver.——Dr. Harry S. Finney, Denver, has resigned as a member of the city health department.

Social Diseases.—Dr. Samuel J. Crumbine, Topeka, secretary of the Kansas State Board of Health was in Denver, March 2, as a representative of the National Council of Defense, to assist the state board of health and the Colorado Council of Defense in organizing a campaign against social diseases. Dr. Crumbine held a conference with Governor Gunter and the secretary of the state council of defense and other physicians and members. Dr. Crumbine is organizer of this work for the states of Colorado, Nebraska, Kansas, Texas, Oklahoma and New Mexico. The plans of organization have the following ends in view: a statute compelling the report of all social diseases, the creation of diagnostic laboratories, the establishment of free clinics under certain regulations, and the isolation and treatment of all women suffering from infections.

CONNECTICUT

Personal.—Dr. Seldon B. Overlock, Putnam, has been appointed a member of the state medical examining board. Dr. Frederick E. Wilcox, Willimantic, on the homeopathic board, and Dr. Leroy A. Smith, Higganum, on the eclectic board.——The Connecticut license of Dr. William L. Owen was revoked.——Dr. Arthur H. Baldwin, Norwalk, was seriously injured in an automobile accident, while making a hurried call.

DELAWARE

Officers Elected.—At Wilmington, the New Castle County Medical Society elected the following officers: Dr. John Ball, Elsmere, president; Dr. Harold L. Springer, Wilmington, vice president; Dr. Taleasiu H. Davies, Farmhurst, secretary-treasurer, and Drs. Harold L. Springer, Samuel C. Rumford and William H. Kraemer, all of Wilmington, members of the board of censors.

Personal.—Dr. Henry I. Stubbs, Wilmington, who had a serious operation performed on him at the Delaware Hospital, is convalescent.——Dr. William S. Hitch, Laurel, is critically ill with paralysis.——Dr. Vincent M. Myers, Wilmington, has resigned as secretary of the board of health to accept a position with a life insurance company in New York. The position left vacant by Dr. Myers has been filled by the appointment of Ex-Mayor Price, a civilian.——Dr. Allen A. Perkins, Hockessin, was reelected as city physician.

FLORIDA

Convalescent Hospital.—The government will establish a large convalescent hospital at Lake City, using the buildings of the Columbia College.

Free Distribution of Biologic Preparations.—The Florida State Board of Health has announced the inauguration of free distribution of antitoxin and vaccines. These products will be distributed from about twenty-five of the larger cities and towns of the state. Heretofore, it has been the plan for physicians to purchase such drugs for indigent persons and have them charged to the state. The products to be distributed are diphtheria, tetanus antitoxin, antimeningococcus serum and the pasteur treatment for rabies.

GEORGIA

Personal.—Dr. Charles D. Cleghorn has been elected superintendent of the Macon Hospital, to succeed Dr. O. E. Nichols, who will be attached to a Red Cross unit in France. Dr. Cleghorn is a roentgen-ray specialist who retired from practice several years ago.——Dr. T. F. Sellers has been appointed bacteriologist for the Georgia State Board of Health.

Neglect of the Ellis Law.—Answers to a questionnaire sent out by Dr. T. F. Abercrombie, secretary of the state board of health, disclose the fact that only eight counties have fully put into effect the Ellis health law which requires each county to establish health boards composed of three members, the county superintendent of schools, the director of the board of roads and revenues and one physician to be selected by the county grand jury. Boards have been organized in sixty-six counties, although grand juries in only eighteen have provided an active county health officer in the person of a physician. The chief neglect of the boards has been in the reporting of contagious and infectious diseases.

State News.—A new brick addition to the state sanatorium at Milledgeville was begun in February. This will accommodate 500 negro patients. Appropriation for the work was made by the legislature at its last session. On completion the building will have cost $89,250. The crowded conditions in the colored quarters made the new addition necessary.—— Dr. Thomas F. Abercrombie, secretary of the state board of health, has asked for two medical inspectors for special work in meningitis and smallpox throughout the state.——An Atlanta firm has been awarded a contract by the War Industries Board to erect a tuberculosis hospital at Asheville, N. C., at a cost of $1,750,000——Proprietary or patent medicines are to receive attention from the state board of health who will ask the legislature for restrictive legislation. The state board of health is conducting a campaign for the establishment of county health departments in counties where no such organizations exist. This is to be done under the Ellis law, which provides that such action may be taken on the recommendation of two successive grand juries. In counties where departments have been created, boards are urging health surveys in conjunction with the Rockefeller Foundation, one half of the expense of which is paid by the counties. Surveys are now being made in Troup and Tift counties. In view of the Ellis law regarding communicable disease, the state secretary has sent out thousands of cards to all county health boards on which reports of such diseases are to be made. The following is the complete list of diseases declared to be communicable and required to be reported to the state board of health: actinomycosis, acute infectious conjunctivitis, anchylostomiasis (hookworm), anthrax, cerebrospinal meningitis, chickenpox, cholera, dengue, diphtheria, dysentery (amebic), dysentery (bacillary), favus, German measles, glanders, gonorrhea, leprosy, malaria, measles, mumps, paratyphoid fever, plague, pneumonia (acute lobar), poliomyelitis, rabies, Rocky Mountain spotted or tick fever, scarlet fever, septic sore throat, smallpox, syphilis, tetanus, trachoma, trichinosis, tuberculosis (pulmonary), tuberculosis (other than pulmonary), typhoid fever, typhus fever, whooping cough, yellow fever.

IDAHO

Personal.—Dr. Roscoe N. Jackson, Sandpoint, has been appointed head of the state insane asylum at Blackfoot to succeed Dr. Walter F. Pike, resigned.——Dr. Leonard E. Hanson, Wallace, was operated on at St. Luke's Hospital, Spokane, for appendicitis.——Dr. D'Orr Poynter, Blackfoot, has been named as superintendent of the state sanitarium for feebleminded at Nampa.

State News.—In the lumber camps of the panhandle district of the state, smallpox and whooping cough have recently been prevalent.——At the camps of the Rose Lake Lumber Company the crews have been isolated on account of smallpox, which is said to be mild.——In carrying out the plans of the Surgeon-General of the Army, a campaign against venereal disease has been launched throughout the state.

ILLINOIS

General.—A special car costing $16,000 with stretcher capacity for six patients and seating room for thirty-two persons, has been provided and will be operated between the various psychopathic institutions of the state in transferring inmates.——For the use of the centennial records and exhibit soon to be held, Dr. Clifford E. Smith, president of the DeKalb County Medical Society, has asked for photographs of officers' homes, instruments, advertisements, prescriptions, etc., of pioneer physicians, and especially for copies of the medical journal published by Dr. Dunlap at DeKalb. Many interesting relics have already been collected.——Dr. Taylor, state supervisor of military zones, after a tour of inspection at Scott Field and other camps, has reported that East St. Louis must be cleaned up to make conditions safe for the camp at Belleville.——March 15, it was reported that there were twenty-eight cases of scarlet fever at Belleville and in the surrounding township.——The secretary of the state board of health, on account of the appearance of sporadic cases of infantile paralysis has sent out a general warning in regard to the disease.——The Peoria County Tuberculosis Sanatorium has been closed on account of the prevalence of insanitary conditions. A consultation was held between local officials and the director of the state department of health, March 13, regarding the sanatorium.——After an investigation of the epidemic of intestinal trouble at Peoria in which 3,000 persons were afflicted, the state analyst, who examined the water, said that it had been badly contaminated and might have been the cause of the trouble. The water at present, while not pure, is in much better condition.

Chicago

Society Meeting.—At the meeting of the Robert Koch Society for the Study of Tuberculosis at the City Club in Chicago, March 28, Dr. Everett Morris, Oak Forest, gave the results of induced pneumothorax in 202 cases of tuberculosis, and Dr. Burton H. Rogers read a paper with lantegn demonstration of the subject of "The Barnyard as a Disseminator of Tuberculosis."

Personal.—Dr. Frederick A. Besley, major and director of Base Hospital No. 12 in France, has recently been detached from that unit and is now consulting surgeon in the field.—— Mr. Edward R. Pritchard, for twenty years secretary in the city health department, was presented with two liberty bonds and tendered a banquet by physicians of the department and others, March 15, in recognition of his faithful service.

Miscellaneous News Items.—April 14 to 21 will be clean-up week in Chicago, and the plan is to make it a dustless operation.——The death rate in the city for the week ending March 9, according to the figures of the health department, was 14.8 per thousand of population. For the same period of 1917 it was 18.1.——Major Patrick J. H. Farrell, survey officer and pathologist of the base hospital at Camp Travis, Texas, is now convalescing from pneumonia contracted in camp.—— The sending of three typhoid patients from Whiting and Indiana Harbor, Ind., to Chicago led the health commissioner to protest to the Indiana authorities.

MARYLAND

Bureau of Child Hygiene.—The establishment of a bureau of child hygiene as a part of the Baltimore City Health Department, to prevent a high death rate among infants, is under construction. It has been recommended by Health Commissioner Blake, as a result of studies made by Dr. William T. Howard, Jr., assistant commissioner of health. The details are yet to be worked out.

More Patients at General Hospital No. 2.—An additional number of 101 patients arrived the latter part of the week at the United States Army General Hospital No. 2, Fort McHenry, from the U. S. Army General Hospital No. 1, Ellis Island, N. Y. A large number of the soldiers are from France. Twenty-five patients were transferred from the hospital at Fort McHenry to the Army hospital at New Haven, Conn.

Personal.—Dr. Kate B. B. Karpels, of the emergency dispensary of the Army Medical Department, has been given the relative rank of first lieutenant in the Army. Dr. Karpels

is the first woman to receive such a rank.——Dr. William Rush Dunton, Jr., Townson, gave a talk on "War Work" at a meeting of the Children of the American Revolution in Baltimore, March 23.

NEW YORK

Third Course in Contagious Diseases.—The third course given this year in clinical and bedside instruction in contagious disease for registered physicians will begin at the Willard Parker Hospital, April 2. There are no fees, but those taking the course are expected to attend regularly.

Public Nurses for Rural Districts.—A bill has been introduced into the legislature to provide public nurses for rural districts. The measure authorizes one graduate nurse for every 15,000 population in each county, exclusive of the inhabitants of cities. The salaries of the nurses are to be $1,200 and the board of supervisors are required to supply the funds.

Protests Against Interference with Physical Training Law.—The American Physical Education Association, with headquarters in Springfield, Mass., has sent resolutions adopted by the association to Governor Whitman of New York earnestly requesting him to protect the health and physical education of the children of New York by keeping intact the present laws, which have been attacked in the legislature, or by promoting measures to make the laws more effective. The copy of the resolutions sent to the governor is signed by Dr. William Burdic, president; Dr. Dudley A. Sargent, Cambridge, vice president, and Edward H. Arnold, William A. Stecher and Randall D. Warden, members of the executive committee.

Classroom Ventilation and Respiratory Diseases.—In order to obtain more concrete evidence of the value of fresh air and to test the findings of the New York State Commission on Ventilation that some years ago made an investigation as to the comparative value of various systems of ventilation, the Bureau of Child Hygiene, in 1916, began an inquiry into the possible relationships between the prevalence of respiratory diseases among schoolchildren and classroom ventilation. The study was made in cooperation with the New York State Commission on Ventilation, which had full control of the selection of classrooms with reference to the type of ventilation to be included. This investigation was carried on among 5,533 pupils of seventy-six classrooms in twelve schools operated under three different types of ventilation. The investigation was conducted during a five-month period in the late fall, winter and early spring, and leads to the following conclusions: In the closed-window, mechanically ventilated type of classroom kept at a temperature of about 68 degrees F., the rate of absences from respiratory diseases was 32 per cent. higher than in the open-window, naturally ventilated type of classroom kept at the same temperature (about 68 F.) and about 40 per cent. higher than in the open-window, naturally ventilated type of classroom kept at a temperature of about 50 degrees. The relative humidity of classrooms, whether ventilated by natural or mechanical means, was not a causative factor in the occurrence of respiratory illness among schoolchildren.

New York City

Burke Foundation for Government.—Arrangements have about been completed whereby the convalescent home of the Burke Foundation will pass under the control of the government for the period of the war. The home which has accommodations for several hundred patients will be used as a convalescent home for soldiers.

Gifts and Bequests.—To Jewish Charities, $1,000,000; Mount Sinai Hospital, New York, $37,500; the Montefiore Home, $37,000; the Hebrew Benevolent and Orphan Asylum, $27,000; Home for Aged and Infirm Hebrews, $17,000; Beth Israel Hospital, $12,500; German Hospital, $5,000; Hebrew Infant Asylum, $5,000; National Jewish Hospital at Denver, $3,500; the Hospital for Deformities and Joint Diseases, Skin and Cancer Hospital, Tuberculosis Preventorium for Children, the New York Eye and Ear Infirmary, each $2,500, by the will of Ludwig Dreyfus, some of these bequests to be paid immediately and others on the death of his wife.

Grip Epidemic.—New York is said to be suffering from a severe epidemic of the grip; but as this is not a reportable disease there are no figures by which the extent of the epidemic can be gaged. The health department has issued a set of precautions with a warning that grip is the most easily transmitted of all the highly contagious respiratory diseases. The figures of the health department indicate that pneumonia shows no signs of abating. During the week ending March 16, there were 426 cases as against 247 for the corresponding week of 1917. Sing Sing Prison reports that there are thirty patients suffering from grip in the prison hospital, and about seventy in the dormitory and cell block.

OHIO

Postgraduate Course.—The Cleveland Academy of Medicine announces to its members who have paid their dues for 1918 a free postgraduate clinical and didactic course in pediatrics, surgical diagnosis, casualty surgery, physical diagnosis, genito-urinary diseases, syphilis, gynecology and gross pathology.

PENNSYLVANIA

State to Care for Wounded.—March 21, Governor Brumbaugh appointed a committee to form plans for the physical restoration, education and employment of convalescent and disabled soldiers. The committee will cooperate with the Surgeon-General's Office in Washington, D. C., and various schools in the state will provide quarters and training. More than 30,000 industrial establishments have offered to care for disabled soldiers, 1,829 alone being open to men who have lost their power of speech through shell shock.

State News.—A service flag containing thirty-two stars will be dedicated at the April meeting of the Fayette County Medical Society.——Drs. G. Franklin Bell, Williamsport, Edward Lyon and John A. Campbell were appointed a special committee by the Lycoming County Medical Society to make a report on the features of the Pennsylvania workmen's compensation law, in which the physicians are interested.——The only man among the 400 employees of the Middletown car shops who evaded vaccination during a recent epidemic came down with smallpox. Four cases of smallpox occurred among the colored population of Harrisburg leading to the vaccination of 500 persons, March 11.——At a meeting at Bloomsburg, March 14, the Montour and Columbia county medical societies agreed to meet together hereafter.

Personal.—Dr. Samuel McC. Hamill, Philadelphia, has been named chairman of the newly formed child welfare committee of the Council of National Defense and will lead a campaign to save at least 100,000 babies. Through the women's committee, known as the state council section of the Council of National Defense, the subdivisions of the problem of child welfare, such as infant mortality and the development and care of children of preschool age, have been taken up and the importance of cooperation with state, municipal and county health departments has been urged. Physicians and nurses trained in child welfare and public health work, as well as volunteer workers, will be supplied by the committee to counties of the state.——Dr. Isaac Shirk Simons, Elizabethtown, Lancaster County, was shot and severely injured while attending a patient, March 9.——Dr. Maria White, India, having relatives in New Castle, has been at Camp Lee, Va., studying parasitic diseases, at the instance of the authorities.——Dr. Theodore C. Harter, Bloomsburg, will be a candidate for state senator.——Dr. Benjamin F. Royer, Harrisburg, acting commissioner of health, will deliver the memorial address on the late commissioner, Dr. Samuel G. Dixon, at the Academy of Natural Sciences, Philadelphia, April 9.——Dr. Albert M. Sittler was elected president and Dr. Harvey Balliet, health officer of the Bowmanstown Board of Health.——Dr. Simon S. Koser and his wife, Dr. Cynthia E. Williams-Koser, Williamsport, have leased their private hospital to the managers of the Williamsport Private Hospital, recently burned, and will travel for two years in California and Alaska.——Dr. Albert F. Bronson, Girardville, will be a candidate for the legislature.——Dr. J. Spencer Callen, Shenandoah, will be a candidate for the legislature.——Dr. Mary B. Newell has been appointed resident physician at the tuberculosis hospital, Pittsburgh. She was formerly in hospital service in Chicago.

Philadelphia

War on the Mosquito.—Plans to eliminate the mosquito from southwest Philadelphia as health precaution for the thousands of workers at the Hog Island shipyard and other industrial plants were formulated in the office of Dr. Wilmer Krusen, director of public health and charities, March 20. The work will be performed jointly by the city and the state, with the assistance of the industrial establishments themselves. Last year the work was confined to the lowlands between Broad Street and the Delaware River. The department of public works has a fund of $10,000 for the work.

The Alumni Society Elects Officers.—At the annual meeting of the Philadelphia Alumni Society, medical department, University of Pennsylvania, held February 16, the following officers were elected: president, Dr. S. Lewis Ziegler; honorary president, Provost Dr. Edgar Fahs Smith; first vice president, Dr. Henry J. Off; second vice president, Dr. John J. Robrecht; third vice president, Dr. William S. Wray; corresponding secretary, Dr. Stephen E. Tracy; recording secretary, Dr. W. Oakley Hermance; treasurer, Dr. Herbert B. Carpenter; executive committee, Drs. B. Franklin Stahl, Harvey E. Schock, Paul J. Sartain and McCluney Radcliffe, and Clarence P. Franklin.

SOUTH CAROLINA

Board of Health Appointments.—At Charleston, Dr. J. Merceir Green has been reappointed health officer, and Dr. Charles P. Aimar and Dr. Henry W. J. de Saussure were reappointed members of the board of health.

General.—At Florence, action has been taken to open a tuberculosis clinic for whites and negroes, and to employ a visiting nurse. After attending a conference of health officers at Atlanta where health conditions in the cantonment zones was discussed, Dr. H. C. Cody, Spartanburg, reported improvement in conditions throughout the territory, and said the problem for Spartanburg was to eliminate mosquitoes and malaria, and the fly and typhoid fever. He urged better collection of garbage for the city.——The last session of the state legislature appropriated $5,000 for fighting tuberculosis among cattle and cholera among hogs. Three veterinarians will be employed and an active campaign begun.——Dr. Luther A. Riser, executive secretary of the South Carolina Antituberculosis Association reports that $10,000 was realized from the sale of Red Cross seals.

TENNESSEE

State Medical Association Meeting.—The eighty-fifth annual session of the Tennessee State Medical Association will be held at Memphis, April 9, 10 and 11. The association is among the oldest state associations in the United States. Jan. 1, 1918, it had 1,600 members, out of a total of 2,741 physicians in the counties represented in the association, while there were 287 physicians in counties not represented.

General News.—Five cases of smallpox developed among the nurses at the Ellinger Hospital at Chattanooga in the latter part of February and the hospital was quarantined by Dr. Carlisle P. Knight, United States Public Health officer, who was in charge in this zone. All persons exposed were vaccinated.——Work on the new Memphis and Shelby County Tuberculosis Hospital at Memphis was held up early in March on account of matters of procedure. The rules for the conduct of the hospital have now been adopted. Dr. John M. Maury, Memphis, has been named on the board of trustees.——The examination of 3,300 men on construction work at the Bend, near Nashville, showed little disease or disability. All unprotected men were vaccinated.——At Knoxville, an ordinance has been proposed requiring the examination for contagious or infectious disease four times a year of all restaurant, hotel and boarding house employees——Dr. Carlisle P. Knight of the United States Public Health Service will visit health officers in all parts of the state in the interest of the campaign against venereal diseases.

TEXAS

Personal.—Dr. Robert J. Gauldin, Dallas, has resigned as vice chairman of the state board of health.——Dr. Royal S. Loving, secretary of the Dallas County Medical Society has resigned to enter the military service; Dr. William W. Fowler was elected to fill out the unexpired term.——Dr. Charles F. Card, Justin, has been made first assistant health officer at Dallas in charge of the work of visiting physicians and quarantine officers, and Dr. Vernando P. Armstrong, Dallas, has been appointed second assistant in charge of the emergency hospital, the city ambulance and the visiting nurses.

Miscellaneous.—The division of sanitation of the health department at Dallas has completed the spring survey of streams and other breeding places of mosquitoes and adopted measures for their elimination. Dr. Alva W. Carnes, Hutchins, health officer, deplored the difficulty of getting sufficient help at the emergency hospital. The food and sanitation divisions have been commended for the satisfactory condition of health matters in their jurisdiction. During February there were seventy-six cases of smallpox and 425 cases of measles. An amendment to the food ordinance has been proposed governing outside displays of food.——Representative Carlock has introduced a bill into the legislature advocated by the Texas Social Hygiene Association making venereal diseases reportable under the file number of the physician.——At Fort Worth a clinic is to be established for the treatment of venereal diseases which will be in charge of a specialist of the United States Public Health Service. Two probation officers, a social worker and nurses to be furnished by the Red Cross complete the personnel.——At Dallas a free tuberculosis clinic will be established. Dr. Raleigh W. Baird has been chosen chairman of the clinic committee.——At a special meeting of the Bexar County Medical Society at San Antonio, March 12, the program consisted of a symposium on pneumonia. Papers were read by Dr. Rufus J. Cole and Capt. Alphonse R. Dochez, M. R. C., of the Rockefeller Institute, New York, and Dr. William G. MacCallum, professor of pathology, Johns Hopkins Hospital, Baltimore.——For the purpose of improving sanitary conditions in the smelter district at El Paso, on the solicitation of Dr. Will Rogers, county health officer, the county commissioners appointed a special board of health for the district, on which they named Dr. Will Rogers, Dr. Louis G. Witherspoon and Mr. Will Hord.

UTAH

Personal.—Dr. William R. Brown has been appointed city physician of Ogden.—Dr. LeRoy C. Potter, assistant physician at the state mental hospital, Provo, has resigned and will resume general practice.——Dr. Herbert C. Deane has resigned as registrar of vital statistics at Bingham.——Dr. P. S. Hagefan has been appointed health officer at Bingham to fill the vacancy caused by the removal of Dr. Herbert C. Deane to Idaho.——Dr. E. M. Conroy has been made chairman of the Weber County Council of Defense at Ogden.

Miscellaneous.—It is announced that a free dispensary for the treatment of the social diseases will be opened at Salt Lake City in connection with the emergency hospital.——The state health commissioner, Dr. T. B. Beatty, assisted by two federal government representatives, will begin a vigorous campaign for a better reporting of births, which is desirable for war reasons. It is hoped to place the state within the registration area.——At Logan efforts are being made to establish better reporting and more effective quarantine of infectious diseases. The chairman of the local board of health has called on citizens and physicians for better cooperation. An ordinance on the subject has been prepared.

VIRGINIA

Reorganizing the City Health Department.—Under the new plan of organization of the health department provided for under the ordinance of February 20, at Norfolk, the health department will consist of three members, with a health director, who need not be a member of the community or the state. Dr. George M. Converse, of the United States Public Health Service, has been appointed director. The plan creates a new health district, which is under the joint control of the city, the United States Public Health Service and the American Red Cross, and comprises territory in which are located a number of the Army cantonments, hospitals and camps.

Personal.—Dr. William S. Keister, Richmond, has gone to San Antonio, Texas, where he will be in charge as one of the health officers of the war camps located near the city. He has been connected with the Virginia state health service. His father, Dr. B. C. Keister, has discontinued his sanatorium and will convert the building into apartments.—The salary of the state health commissioner, Dr. Ennion C. Williams, Richmond, has been increased by the state legislature from $3,500 to $5,000.——Dr. R. L. McMurran, Portsmouth, has been appointed by the governor quarantine medical inspector for the division of Elizabeth City for the term of two years. ——Dr. James R. Speight has been appointed assistant to Dr. Powhatan S. Schenck, health commissioner of Norfolk, to fill the position made vacant by the resignation of Dr. Claiborne Willcox, New Rochelle.——Dr. Philip W. Boyd, Winchester, has been appointed member of the state board of health.——Dr. James W. Reed, Ocean View, was elected health officer of Norfolk County.

WASHINGTON

Miscellaneous.—Dr. John B. Anderson, city health officer of Spokane, has been required by the state board of health to quarantine all patients with social diseases, beginning April 1, and physicians will be required to report all such cases.

The patients will be isolated in the Rivercrest Contagious Hospital.——At the meeting of the Pierce County Medical Society at Tacoma, March 10, the Commercial Club presented the society with a service flag bearing thirty-two stars representing the number of members who have joined the colors.

Personal.—Dr. Robert J. Skaife, Colfax, has been appointed county health officer to succeed Dr. Frank A. Bryant, who has gone into the Army medical service.——Dr. Hilbrand J. Hards has resigned as city health officer at Tacoma.——Dr. J. Glen Harbison has been made chairman of the committee on health and sanitation of the Spokane Chamber of Commerce, to succeed Dr. Nathan M. Baker. Other physicians on the committee recently appointed are Drs. Frank Holmes, C. O. Linder, Alexander R. Lundgren, Spokane, Sutherland J. Wolff and Edison Worthington.

WEST VIRGINIA

Personal.—Dr. Grover C. Robinson, Charleston, has been appointed superintendent of the state hospital at Spencer in the place of Dr. Charles A. Barlow, resigned.——Dr. William T. Morris, Wheeling, has been appointed deputy inspector of the Scottish Rite in West Virginia.——Dr. Ralph W. E. Cole, formerly of Akron, Ohio, has been appointed state epidemiologist, to fill the vacancy caused by the resignation of Dr. Harold B. Wood.——Dr. Edward H. Thompson, Bluefield, has been made a member of the state health council to succeed Dr. Luther H. Clark, Kyle, resigned.——Dr. Harold B. Wood, Wheeling, has been appointed epidemiologist in the New York State Department of Health.

WISCONSIN

Personal.—Dr. Francis R. Salisbury of Sparta is suffering from a nervous breakdown, following severe infection of a wound.——Dr. John F. Brown, Sparta, superintendent of the state school, has been appointed acting mayor since the death of Dr. Fred P. Stiles.

Miscellaneous.—Twenty-seven cases of infantile paralysis have occurred in Milwaukee since January 1. There have been three deaths.——Three cases of scarlet fever in St. Elizabeth's Hospital at Appleton caused the exclusion of all visitors and the postponement of surgical operations not of an emergency nature.——The new county sanatorium for tuberculosis at Pewaukee Lake in Waukesha County has been completed at a cost of $32,000.——At Beloit, March 14, the office of Dr. Malcolm P. Andrews was robbed of cocain, cash and surgical instruments, it is believed, by drug users. ——About 150 pounds of digitalis, raised last year in the drug gardens of the University of Wisconsin at Madison, will be placed at the disposal of the medical service of the Army.

CANADA

Personal.—Lieut.-Col. D. King Smith has returned to Toronto from Halifax and is now commanding officer of the North Toronto Military Hospital.——Capt. James Douglas Shields, Mount Albert, Ont., has returned to Canada from overseas and has been appointed assistant medical adviser on the pension board at Ottawa.——Major L. Bruce Robertson, C. A. M. C., who has been overseas since the beginning of the war, has been recalled by the University of Toronto. Major Robertson was attached to No. 2 Canadian Casualty Clearing Station.

Hospital News.—According to the tenth annual report of the Harbor View Hospital at Sydney Mines, N. S., 501 patients were treated in 1917, with twenty-three deaths. The financial report showed a credit balance of $5,013.48.——The late James I. Carter, Sarnia, Ont., left the Hospital for Sick Children, Toronto, $30,000.——In 1917, the Western Hospital, Montreal, admitted 1,388 patients. The cost of maintenance per day was $3.01. It was the hardest financial year the hospital has had, as the deficit stood at $40,324.79.——The Protestant Hospital for the Insane at Verdun is reported overcrowded, having 771 patients. It has been extremely difficult to find nurses. The financial year closed with a deficit of $38,471.——Jeffrey Hale's Hospital, Quebec City, added during the past year the James Douglas Tuberculosis wards for advanced cases. Thirty beds in the institution are now devoted to military purposes. During 1917, 901 patients received treatment.——The Laval Hospital, which is being built in Quebec City for the treatment of cases of tuberculosis, will be opened about May 1. It will be used as a clinic for teaching purposes in connection with Laval University. Accommodation will be provided for 135 patients and treatment will be given free of charge. The government of Quebec contributed $25,000 for the erection of the institution, and the city of Quebec a like amount, the remainder being provided by private contribution.——The board of control of Winnipeg has granted $58,600 to cover the deficits in the last year's annual statement of the King George and King Edward Hospitals of that city.——Dr. Maurice McD. Seymour, commissioner of public health, Saskatchewan, opened a new hospital at Eston, Sask., in January.——During the past year, hospitals have been established at Lloydminister, Edam, Eston, and Shaunavon, Sask., and the necessary by-laws have been passed for similar institutions at Davidson, Rosetown, Kerrobert and Lampman. Estevan, Outlook and Lanigan defeated similar by-laws.——A military sanatorium is planned at Kananaskis, near Banff, Alta. It is to cost $400,000, one half to be paid by the Dominion government, and the remainder by the province of Alberta. It will accommodate 300 patients, and when no longer required for military purposes, will become the property of Alberta for the treatment of civilian patients.

GENERAL

Next Examination of National Board.—The National Board of Medical Examiners will hold its next examination at Fort Oglethorpe, Ga., beginning April 8. A little later another examination will be held at Fort Riley, Kan.

Tuberculosis.—According to the estimate of the National Association for the Study and Prevention of Tuberculosis, within the next two years 50,000 more beds will be needed in the United States to care for the indicated increase in tuberculosis on account of war conditions. There are said to be 43,000 beds available at present. The estimate is based on evidence of the incidence of the disease as disclosed by the selective draft. It was formerly estimated that for every death from tuberculosis there were five cases, but it is now believed the true number of cases is two or three times as great. Instead of about 1,000,000 active cases in the country there are probably between 2,000,000 and 3,000,000. The military examinations show that an average of about 2 per cent. of young men of draft age are tuberculous, and this average is confirmed by the experiment at Framingham, Mass.

FOREIGN

Malta Fever.—It was announced from Paris, February 26, that Prof. M. A. Vincent of the Academy of Medicine had developed a vaccine against malta fever.

American Child Welfare Congress.—The Second American Child Welfare Congress, which was to have been held at Montevideo in March, has been postponed to December, 1918. Prof. L. Morquio of Montevideo is chief of the executive board.

Pneumonic Plague.—It was reported, February 24, that pneumonic plague had broken out in Shansi Province, China, that the epidemic had assumed serious proportions and that all northern China was threatened. Five years ago, 30,000 or 40,000 deaths occurred from this disease, which was combated and studied by an international committee of experts.

The Interallies Surgical Association.—Our Danish and Netherlands exchanges comment with disapproval on the change of the International Surgical Association to be an Interallies Association. Pinkhof in the Netherlands weekly remarks that it reminds him of Heine's poem in which he related that in a fever he dreamed that he was pounding his enemy with mighty blows but that the pain of the blows was felt by the pounder, not the poundee.

Relief Units for Palestine.—February 28, it was announced that four medical units for civilian relief work in Palestine following the wake of the British army would be organized at the request of the British government. The funds were to come from the American, Armenian and Syrian relief fund and be administered by the American Red Cross. The American Jewish Relief Committee has appropriated $100,000 for a medical unit for Palestine, and Mrs. Peter J. Schweitzer of Brooklyn has given $25,000 for the treatment of trachoma in that region.

Italian Medical Students in the Army Sent Back to Study.—The *Riforma Medica* states that a recent decree has been issued which orders all mobilized and nonmobilized medical students inscribed in the "third and fourth *corso di medicina*" to return to their respective universities and continue their studies, the courses having been especially speeded up for the purpose. The number of students affected by the decree is 2,300, and they are to be housed in special quarters arranged

by the *Comando Supremo*. Special liberty and special conditions are to be given them so they can make the most of the opportunities for study thus provided.

CORRECTION

"Iodids in Roentgenography."—In the article by D. F. Cameron on "Iodids in Roentgenography," which appeared in THE JOURNAL, March 16, page 754, an error occurred in the following sentence: "It is worthy of note that the opacity of the silver iodid preparations that have been commonly used is probably due to the iodid rather than to the silver content." The latter part of the sentence should read: ". . . is probably due more to the iodid than to the silver content."

PARIS LETTER

PARIS, Feb. 21, 1918.

War Wounds of the Kidney

At a recent meeting of the Société de chirurgie de Paris, Dr. Chevassu, professor agrégé à la Faculté de médecine de Paris and chirurgien des hôpitaux, reported 56 cases of unquestionable wounds of the kidney, of which 46 were recent and 10 old wounds. The wounds of the kidney were accompanied by wounds of the liver in 11 cases; of the lung in 9; of the stomach in 2; of the colon in 3; of the small intestine in 3, and of the spinal cord or the lumbar plexus in 3 cases. A number of cases were accompanied by diverse wounds of the skull or of the extremities. In 21 cases the kidney alone seemed to have been injured.

Leaving out of consideration the possible gravity of associated wounds of other viscera, wounds of the kidney are serious for two reasons: hemorrhage or infection. The gravity from hemorrhage is not very considerable. Among the 46 recent cases, Chevassu saw only 6 cases of severe or grave hemorrhage (3 internal, 2 hematuria); 5 of these terminated fatally; the sixth was nephrectomized and a cure resulted. Among the other cases the hematuria was inconsequential, lasting only a few days or sometimes only one day, or even only for the first micturition, and not being alarming in degree. In 5 cases seen by Chevassu a perirenal hematoma was produced, manifesting itself as a lumbar or lumbar-iliac tumor which was easily detected. In two cases he found it advisable to operate because of high fever; one of these patients died; the other was cured. The other 3 patients were treated expectantly, and all recovered. In the remaining 35 cases there were no special symptoms of renal origin, other than the hematuria, some retraction of the body wall on the affected side, and frequently, at first, phenomena of shock, common in so many cases of abdominal wounds.

PLAN OF TREATMENT

In these 35 cases, in which the symptoms did not demand *a priori* medical treatment directed toward the kidney specially, the following course was pursued: primary operation, 11 cases; secondary operation, 2 cases; not operated on, 22 cases. The primary operations comprised 1 nephrectomy (1 death); 7 lumbar drainages (1 death); 3 interventions on other organs than the kidney (colon, 2 cases, 1 death; peritoneum, 1 case, 1 death). The two secondary operations were directed to the associated as well as the kidney lesions: purulent pleurisy, 1 case (1 death), incision of an intraperitoneal abscess (1 case with cure). There remain 22 cases in which neither abdominal, lumbar nor thoracic operation was done although several of the men were operated on for wounds of the brain or of the extremities. Of these 22 cases which were treated expectantly (absolute rest, proper diet and hexamethylenamin), 3 terminated fatally and 19 were evacuated. Of 28 cases in which pieces of projectile were embedded, 10 terminated fatally, 36 per cent. mortality, and 18 seton cases had 4 deaths, 22 per cent. mortality. The greater mortality among the projectile cases is due to the persistence of the hematuria or secondary hemorrhage and infection.

HEMORRHAGE AND INFECTION

The immediate treatment of wounds of the kidney demands that cognizance be taken of two serious conditions—hemorrhage and infection. The first is relatively slight, at least among the conditions habitually observed in an automobile ambulance. The severe internal hemorrhages, which sometimes accompany wounds of the kidney, seem to be associated with the other bleeding wounds at least as often as if not oftener than with the injury of the kidney itself. In either case, operation to secure hemostasis is indicated. In the case of the kidney, this nearly always means a nephrectomy, because in these cases there is always need for haste; but a kidney should never be removed without knowing something about its fellow. Hematuria, alone, is not an indication for operation, unless it is menacing because of its persistence and abundance. As for the operations other than nephrectomy, suture of the lacerated kidney is a very difficult procedure; tamponage, for an organ as movable as the kidney, does not appear ever to have arrested a hemorrhage which would not have been arrested spontaneously; but one can conceive that in some cases, fortunately, the lesion is limited and a partial nephrectomy may be indicated.

Apart from the operative indication of hemorrhage, is it advisable to intervene systematically in all cases of kidney wounds for the purpose of insuring disinfection? Chevassu does not believe that this course is indicated in the seton wounds. Experience has shown that most of the abdominal and thoracic seton wounds heal spontaneously. In cases in which the projectile is still in the tissues, should one apply systematically to wounds of the kidney the usual formula: excision of the projectile track, and removal of the missile? Chevassu does not believe in this now, for many reasons: (1) because it has been shown that many of these foreign bodies lodged in the kidney region are tolerated well, especially when they are small; (2) because in many of these cases there is danger of inflicting much damage during the removal of the foreign body; (3) because the treatment of the renal wound, if it is infected, seems to be hazardous, unless a partial nephrectomy is done, and that often leads to a total nephrectomy. Only the large shell fragments, which can be removed without too much damage, may be regarded as an indication for immediate operation. As for the others, it is better not to operate at once; if they give rise to symptoms, a secondary operation can be done.

OLD WOUNDS OF KIDNEY

So far as old wounds of the kidney are concerned, Chevassu has seen only 10 cases in the hospital service of the interior. Of these 10 cases (all of from five to eighteen months' standing) none had been subjected to an immediate operation; 3 had been operated secondarily: removal of a shell fragment from the kidney on the eighteenth day; opening of a perinephritic abscess on the fifteenth day; removal of a lumbar projectile *à froid*. One of these cases presented a urinary fistula which disappeared spontaneously in about two months. Of these 10 patients, 1 sought medical attention because of pyuria, 1 for nephritis, 2 for pain; the other 6 had been sent by the Commissions de réforme for study of their renal function, although they did not present any appreciable symptoms. Two of these patients still carried a shell fragment in the perirenal zone; 7 had normal micturition and voided a clear urine; 2 voided a muddy urine; one of these urines did not contain any pathologic product. A comparative study made of both kidneys of 7 patients by means of ureteral catheterization showed a marked inferiority of the wounded kidney in 2, including 1 with the healed fistula; in 3, both kidneys were approximately equal, including a man who had had an intrarenal shell fragment removed on the eighth day; in 2, paradoxical as it may seem, there was a slight increase in the secretion on the wounded side. On the whole, therefore, a considerable number of these old kidney wound cases do not present any appreciable stigmata, determinable by exploratory procedures of precision. Hence, these experiences justify surgeons at the front in being as conservative as possible in cases of wounds of the kidney.

Treatment of Intra-Ocular Foreign Bodies

At a recent session of the Académie de médecine, Dr. de Lapersonne, professor of clinical ophthalmology on the Faculté de médecine de Paris, presented a very important paper discussing the indications for treatment of intra-ocular foreign bodies incident to war wounds. His conclusions are as follows: 1. Among the war wounds, the small intra-ocular shell fragments present grave dangers, and often entail blindness in one or even both eyes. 2. In spite of the difficulties that have hitherto stood in the way of the adoption of measures for the protection of the eyes against shell fragments, it is important to insist on the use of visors, goggles or masks. 3. Foreign bodies should be extracted at once. It is indispensable that autonomous ophthalmologic services should be installed in the hospital centers, one or two for each army, and that the rapid transfer of the wounded to these services be assured. They should be independent of the surgical automobiles and should have a special radiologic installation, with electromagnets and a complete supply of instruments. 4. Radioscopy being known to be insufficient for the diagnosis of the presence of these small foreign bodies,

it is necessary that the radiologic installation permits exact locating by making a number of negatives if necessary.

Sale of Condensed Milk

The council of public hygiene and of health of the department of the Seine has adopted the following resolutions with regard to the sale of condensed milk: 1. Condensed milk, either sweetened or unsweetened, should contain all the natural ingredients of milk in their normal proportions. 2. Condensed skimmed milk, sweetened or unsweetened, whose food value and marketable value is inferior to those of condensed whole milk, must carry on the label, in plain letters, the word "Skimmed" or the words "Do not give to infants or to the sick." 3. Condensed milk cannot be made from partially skimmed milk. 4. The box should be stamped with the date (month and year) of filling or packing. 5. It should also be stamped to show the quantity of milk (per volume) of normal composition that can be "reconstructed" from the contents of the box. If sweetening is required, the label should show the amount of sugar (saccharose) which the milk should contain when "reconstructed." 6. The label should further state that it is essential to boil the "reconstructed" milk, especially if it is intended for infants. 7. The addition of saccharin to condensed milk should be interdicted. 8. The foregoing rules and regulations also apply to dried or evaporated milk.

LONDON LETTER

LONDON, March 5, 1918.

Another Hospital Ship Sunk by the Germans

The hospital ship *Glenart Castle*, with about 200 persons on board including the medical staff and nurses, was torpedoed at 4 a. m., February 26, in the Bristol Channel, and sank in seven minutes; 153, including all the female nurses (who numbered eight) are missing, and it is feared drowned. Immediately after the explosion the lights went out and the wireless system was rendered ineffective. The ship went down stern first, which made the launching of boats extremely difficult even if there had been sufficient time. Fortunately there were no patients on board. The captain stood on the bridge to the last, and was heard to tell the quartermaster to get away to the boats. He apparently went down with the vessel. Seven out of the nine boats were successfully launched, but some of them were not fully occupied. This brings the number of British hospital ships sunk within the past twelve months up to seven. All were torpedoed without warning during the night.

Retirement of Sir Alfred Keogh

Sir Alfred Keogh has retired from the position of Director-General of Medical Services and resumed work as rector of the Imperial College of Science and Technology. He has been one of the few unalloyed successes of the war. The results achieved by the Army Medical Service are largely due to his prevision. They can be estimated by comparison with the much smaller South African War, in which the whole British force rarely exceeded 200,000, and there were 57,000 cases of typhoid fever. On this basis we should have expected half a million in the present war, but there have been little more than 3,000. In South Africa 721 officers and 7,091 men were killed or died of wounds, a total of 7,812; and 339 officers and 12,911 men, a total of 13,250, died of disease. In a recent fortnight, the published lists of casualties in all theaters of the present campaign show 646 officers and 7,453 men killed or died of wounds, a total of 8,099. In the same period, eight officers and 303 men "died," that is, of disease, a total of 311. The number of reported killed and wounded in this fortnight exceeded that of the whole of the South African campaign, while the number who died of disease did not reach one fortieth of the number who succumbed from this cause. In other figures, while in the South African War of every hundred deaths sixty-three were due to disease, in the present campaign the loss from this cause in one typical fortnight is less than four in every hundred deaths. The health of the troops at home is better than that of the civil population; that of those in France, better than the average health of the army in peace time. Elsewhere, even where there is a special risk of disease, health statistics give no cause for undue anxiety.

On the occasion of his reelection as president of the Association Technical Institutions Sir Alfred Keogh said: "The proudest thing I feel in connection with this campaign is that science has been vindicated in its relation to administration. If we have accomplished anything it has been that we have succeeded in preventing those diseases which in all previous campaigns have wiped out armies, literally, and that has been due to the fact that for some years past we have been engaged in teaching the army what is the relation of science to military work."

On the occasion of his retirement, Sir Alfred Keogh was entertained at dinner and presented by consulting physicians and surgeons with a gold cup. In proposing his health, Sir Berkeley Moynihan said that Sir Alfred had established at home, in France, in Greece, Palestine, Egypt, Mesopotamia, in many outposts of the empire, 2,500 hospitals, which were at least the rivals of the very best civil hospitals that were to be found in this country before the war. Our armies in the field had been sheltered from the ravages of disease with unexampled security. There had been fewer cases of typhoid fever than there were deaths from typhoid fever in South Africa, though our army was now ten times as large as it was then, and though the conditions in respect to climate and environment were much worse. Sir Alfred Keogh was the parent of constructive sanitary reform in the British Army. In Egypt, bilharziosis, which had existed from the time of the Pharaohs, and claimed one third of the male population of the country as its victims, had been studied by a commission sent out by Sir Alfred Keogh, and as a result it might be predicted that the disease was in process of rapid extinction. Most valuable scientific work had been done in malaria, dysentery, trench fever, cerebrospinal meningitis, tetanus, and a large number of medical and surgical conditions.

The Treatment of Malaria

The large number of cases of malaria in soldiers returned from overseas and concentrated in special hospitals in England has led the War Office to institute a scheme of comparison of the results obtained by different methods of treatment. They have been summarized by Sir Ronald Ross, the adviser of the War Office in these matters, in a paper read at the Society of Tropical Medicine. The treatments adopted are classified into (*a*) "antirelapse quinin prophylaxis," designed for preventing relapses as much as possible without attempting absolute and immediate cure; (*b*) "short sterilizing," which attempts absolute cure with treatments ordinarily continued only for a few days; (*c*) "long sterilizing," aiming at producing absolute cure by longer courses than in short sterilizing, and (*d*) mixed treatments, and treatments with drugs other than quinin. The criterion of success is the disappearance of relapses during the observation periods practicable. In nearly all the cases the malaria (mostly benign tertian) was already of considerable duration. The treatment comprised different preparations of quinin, administered by mouth and by subcutaneous, intramuscular and intravenous injections in different doses and for different periods. The result from all the quinin treatments taken together is represented by 27 per cent. of ascertained relapsing cases in a total of about 2,500 patients. A control was afforded by 192 men, who were watched without any quinin treatment at all. Of these, eighty-nine relapsed within twenty-seven days, and seventy-six were presently judged not to be sufficiently well to allow of quinin treatment being withheld any longer, so that 86 per cent. of the untreated patients remained ill, and 46.5 per cent. actually suffered from relapses during the period. The conclusion is that short, intensive treatment by large doses of quinin (for example, up to 180 grains of quinin sulphate or hydrochlorid in three days) with rest, stimulants, and good after-treatment is well borne and effects a substantial proportion of cures. The same can be said for doses in Class C, which in some instances totaled over 1,000 grains in four weeks, large intramuscular doses being given during the first days of that period. But, however, the doses were given in Classes B and C, the liability to relapse in patients receiving the treatment was not any less than in cases treated much less heroically under the method of Class A, by giving comparatively small doses amounting to about 60 grains a week. Doses of this order gave the best results both in respect of the prevention of relapses and as regards the well-being of the patient. This dosage can be distributed in various ways without producing any marked difference. The amount should not, however, be less than a daily dose of about 10 grains, as this showed a marked superiority over smaller quantities. No conspicuous advantage was found in any one of the three methods of administration of quinin, intramuscular, intravenous or oral. Chemical examinations point to a tendency for the excretion of quinin, in whatever doses given, to reach a concentration of from 7 to 11 grains per quart of urine, and show that the drug is not eliminated more rapidly when given by the mouth than when given by other channels.

THE CHICAGO SESSION

List of Chicago Hotels Recommended by the Local Committee on Arrangements

The local Committee on Arrangements, on recommendation of its subcommittee on hotels, urges that those who plan to attend the Chicago session, June 10 to 14, should make their selection and write directly to the hotel, stating the accommodations desired and indicating the rate they are prepared to pay. The management of the hotel should be advised of the day on which guests expect to arrive in Chicago, and the length of time they plan to remain. If, in any instance, a satisfactory arrangement with some one of the hotels is not made, write to the chairman, subcommittee on hotels, Dr. C. J. Whalen, 25 East Washington Street, Chicago.

The accompanying table lists a number of Chicago hotels indicating the accommodations which are offered and naming the rates per day. All rates are for accommodation on the European plan except when, as indicated, the American plan is offered.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY CHICAGO HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms Without Bath		Rooms With Bath		Parlor, Bedroom and Bath or Connecting Rooms for One or More Persons*
	For One Person	For Two Persons	For One Person	For Two Persons	
AUDITORIUM—500—Michigan Blvd. and Congress. Headquarters of the Sections on Surgery, General and Abdominal; on Pharmacology and Therapeutics; on Pathology and Physiology; on Preventive Medicine and Public Health; on Genito-Urinary Diseases; and on Gastro-Enterology and Proctology.	1.50 to 2.50	2.50 to 4.00	2.50 to 4.00	4.00 to 6.00	....
BLACKSTONE—700—Michigan Blvd. and Seventh. Headquarters of the Sections on Nervous and Mental Diseases and on Dermatology.	3.00	....	3.50 to 7.00	5.00 to 10.00	....
CONGRESS AND ANNEX—1,500—Mich. Blvd. and Cong. Headquarters Sections on Obstetrics, Gynecology and Abdominal Surgery; Diseases of Children; Stomatology; Orthopedic Surgery.	2.00 to 3.00	3.00 to 5.00	3.00 to 6.00	5.00 to 7.00	6.00 to $50.00
LA SALLE—1,800—Madison and La Salle. Headquarters of the Sections on Ophthalmology, and on Laryngology, Otology and Rhinology.	2.00 to 3.00	3.00 to 4.00	3.00 to 5.00	5.00 to 8.00	4.00 to 12.00
MORRISON—1,000—Clark and Madison. Headquarters Section on Practice of Medicine.	....	....	2.00 up	....	....
SHERMAN—1,500—Clark and Randolph. General headquarters housing the Registration Bureau; Information Bureau; Branch Post Office; Scientific Exhibit, and Commercial Exhibit.	....	....	2.00 to 5.00	3.50 to 7.00	5.00 to 15.00
ALEXANDRIA—300—Rush and Ohio Sts.	$ 1.00 to $ 1.25	$ 1.50	$ 1.50 to $ 2.00	$ 2.00 to $ 2.50	....
ASTOR—125—176 N. Clark	1.00	2.00	1.50	3.00 to 3.50	....
ATLANTIC—750—Clark, near Jackson Blvd.	1.50 to 2.00	2.00 to 3.00	2.00 to 3.00	3.00 to 5.00	....
BISMARCK—300—171 W. Randolph	1.00	2.00	1.50	3.00 to 3.50	....
BOARD OF TRADE—250—321 S. La Salle	1.50 up	....	....	....	....
BRADLEY—300—Rush and Grand Ave.	1.00	1.50	1.00 to 1.50	2.00	....
BREVOORT—500—120 W. Madison	1.50	3.00 to 3.50	2.50 to 3.00	4.00 up	....
BRIDGE—300—Randolph St. and Fifth Ave.	1.00 to 1.50	....	1.50 to 2.50	....	....
CHICAGO BEACH—500—Hyde Park Blvd. and 51st St., European	1.50 up	2.50 up	2.50 up	4.00 up	....
American	3.50 up	6.00 up	4.50 up	7.50 up	....
CLARENDON BEACH—200—Wilson Ave., at the Lake	....	....	1.50 up	....	$ 4.00 up .....
DARLINGTON—125—4700 North Racine Ave.	1.00	1.50	1.50	2.00	....
DEJONGHE—100—12 E. Monroe	....	....	2.00 up	3.00 up	....
DEL PRADO—400—Midway Blvd. and Jackson Park	....	....	2.50 to 4.00	....	....
DREXEL ARMS—250—Drexel and Oakwood Blvds.	1.00 to 1.25	1.25 to 1.50	1.50 to 2.00	1.75 to 3.00	....
EDGEWATER BEACH—600-3300 Block, Sheridan Rd.	....	....	2.00 up	3.00 up	4.00 up .....
ELMS—150—Fifty-Third and Cornell Ave., American Plan	3.00 to 3.50	....	3.00 to 4.00	....	....
FORT DEARBORN—1,000—Lasalle and VanBuren Sts.	1.50	2.50	2.00	3.00 to 4.00	....
GLADSTONE—500—Sixty-Second and Kenwood Ave.	....	....	1.00 to 1.50	2.00 to 3.00	3.00 to 5.00
GRAND PACIFIC—400—Jackson Blvd. and Clark.	1.50 to 2.00	....	2.00 up	3.00 up	....
GRANT—250—Dearborn and Madison	1.00 up	2.00 up	1.50 up	3.00 up	....
GRASMERE—150—4621 Sheridan Road	....	....	1.50	2.50	4.00 .....
GREAT NORTHERN—550—Jackson, Quincy, Dearborn	1.50 to 2.00	3.00	2.50 to 5.00	4.00 to 6.00	....
HYDE—900—Sixty-Fourth and University Ave. (American Plan)	2.00	....	....	....	....
HYDE PARK—400—Hyde Park Blvd. and Lake Ave. (American Plan)	3.00	5.00	3.50 to 5.00	6.00 to 8.00	....
JACKSON PARK TAVERN—100—Sixty-Seventh and Cornell	....	....	1.50	2.00	....
LAKOTA—350—Michigan Blvd. at Thirtieth	1.00	2.00	2.00	....	....
LEXINGTON—500—Mich. Blvd. and Twenty-Second	1.50 up	2.00 up	2.00 up	3.00 up	....
LUZERNE—100—Clark and Center	1.00 up	....	1.50 up	....	....
MAJESTIC—300—Quincy, bet. State and Dearborn	1.00 to 2.00	2.00 to 3.00	1.50 to 3.50	3.00 to 5.00	....
METROPOLE—300—Michigan Ave. and Twenty-Third	1.50	2.50	2.00 up	3.00 up	....
MONAINE—250—Highland Park, Ill. 30 minutes from Chicago	1.50 up	....	2.00 up	3.00 to 5.00	....
NEW GAULT—200—Madison and Market	1.00 to 1.50	2.00 to 2.50	1.50 to 2.00	3.00 to 3.50	....
NEW SOUTHERN—350—Mich. Blvd. and Thirteenth	1.00 to 1.50	2.00	1.50 to 3.00	3.00 to 5.00	....
PALMER HOUSE—1,000—State and Monroe	1.50 to 2.00	2.00 to 3.00	2.50 to 5.00	3.00 to 5.00	....
PARKWAY—250—Lincoln Park West and Garfield Ave.	....	....	2.50 to 3.50	3.50 to 5.00	6.00 to 8.00
PLANTERS—350—Clark and Madison	1.50 up	....	....	....	....
PLAZA—600—N. Clark and North Ave.	....	....	1.50 to 3.00	2.00 to 3.50	3.00 to 6.00
PLYMOUTH—250—4700 Broadway, cor Leland	1.00	1.50	1.50 to 3.00	....	....
SARATOGA—700—23 to 29 S. Dearborn	1.00	2.00	1.50	3.00	....
STOCK YARD INN—450—W. Forty-Second and S. Halsted Sts.	1.00 up	2.00 up	1.50 up	2.50 up	....
STRAND—300—Sixty-Third and Cottage Grove	1.00 up	....	1.50 up	....	....
STRATFORD—500—Jackson and Michigan Blvd.	1.50	....	2.00 up	6.00 up	....
UNION—70—66-72 W. Randolph	1.00 to 1.50	2.00 to 2.50	1.50 to 2.50	3.00 to 3.50	....
VICTORIA—500—Clark and Van Buren	1.00 to 2.00	....	....	....	....
VIRGINIA—450—Rush and Ohio	1.50 to 2.00	2.00 to 3.00	2.00 to 2.50	3.00 to 4.00	3.00 to 10.00
WARNER—350—Thirty-Third and Cottage Grove	....	1.50	1.50 up	2.00 up	....
WASHINGTON—200—Washington St. between LaSalle and Fifth Avenue	1.50	3.00	1.50 to 2.00	3.00 up	....
WINDEMERE—300—Fifty-Sixth and Cornell Ave. (American Plan)	3.00	5.00	4.00 up	6.00 up	....
WINDSOR-CLIFTON—350—Wabash Ave. and Monroe	1.00 up	1.50 up	2.00 up	3.00 up	....
WYCHMERE—200—Indiana Ave. and E. Eighteenth	.75 up	1.25 up	1.00 up	1.50 up	....

* For definite information concerning accommodations offered and rates, write to the hotels.

Deaths

Jose Lewis Hirsh, M.D., Baltimore; University of Maryland, School of Medicine, Baltimore, 1895; aged 45; a Fellow of the American Medical Association; professor of clinical pediatrics, pathology and bacteriology in the University of Maryland; visiting pathologist to the University Hospital, and consulting pathologist to the Hospital for Women of Baltimore, Md.; died suddenly, March 17, from heart disease.

George Amos White, M.D., Sacramento, Calif.; Long Island College Hospital, Brooklyn, 1869; Jefferson Medical College, Philadelphia, 1870; aged 69; a Fellow of the American Medical Association; a member of the Pacific Association of Railway Surgeons, and division surgeon of the Southern Pacific Railway Company; founder of the White Hospital, Sacramento; died at that institution, March 3.

Lieut. William Thomas Gleason, M.D., M. R. C., U. S. Army, Ely, Nev.; Rush Medical College, Chicago, 1902; aged 38, formerly a Fellow of the American Medical Association; a member of the Nevada State Medical Association; died on the platform of the Denver and Rio Grande Station, Salt Lake City, while on a furlough to visit his wife and child, March 7, from heart disease.

John Patrick Grimes, M.D., Menard, Ill.; University of Illinois, College of Medicine, 1899; aged 42; a member of the Illinois State Medical Society; for several years a member of the staff of St. Joseph's Hospital; physician and surgeon to the Southern Illinois Penitentiary, Menard; died at St. Andrew's Hospital, Murphysboro, Ill., March 14, from cerebral meningitis.

Albert Mehrer Moore, M.D., Philadelphia; Medico-Chirurgical College of Philadelphia, 1905; aged 41; a Fellow of the American Medical Association; a member of the John Heissler Anatomical and Surgical Society; assistant demonstrator of anatomy in the Medico-Chirurgical College Hospital; died at his home, March 6, from cerebro-spinal meningitis.

John Calvin Schofield, M.D., Baltimore; Baltimore University, School of Medicine, 1891; aged 53; formerly professor of nervous diseases and diseases of the throat and chest, and assistant professor of pathology in the University of Maryland; for many years local surgeon of the Baltimore and Ohio Railroad; died at his home, March 7.

Lieut. Harold Franklin Mickley, M.D., M. R. C., U. S. Army, Seneca Falls, N. Y.; New York Homeopathic Medical College, New York City, 1912; aged 27; a Fellow of the American Medical Association; a member of the staff of the base hospital at Camp Dix, Wrightstown, N. J.; died at the base hospital, March 16, from lobar pneumonia.

George Halley, M.D., Kansas City, Mo.; Victoria University, Medical Department, Coburg, Ont., 1869; aged 78; one of the organizers of the Kansas City Medical College, and until 1892 was professor of principles and practice of surgery; retiring to take a similar position with the University Medical College; died at his home, March 11.

Albert Jeffrey Cox, M.D., Superior, Wis.; Rush Medical College, Chicago, 1886; aged 56; a Fellow of the American Medical Association; formerly a member of the Minnesota State Medical Association; surgeon for the Chicago and Northwestern Railroad; formerly a practitioner of southern Minnesota; died at his home, March 13.

Samuel C. Stewart, M.D., Clearfield, Pa.; Jefferson Medical College, Philadelphia, 1881; aged 61; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; formerly chief of the staff of the Clearfield Hospital; died at his home, March 11, from cerebral hemorrhage.

Olof Sohlberg, M.D., St. Paul; Minneapolis Hospital Medical College, Minneapolis, 1884; aged 58; a Fellow of the American Medical Association; for many years a member of the board of directors and visiting staff of the Bethesda Hospital, St. Paul; died on a train en route to St. Paul, March 6, from cerebral hemorrhage.

J. Marshall Elder, M.D., Franklin, Ill.; Physio-Medical College of Indiana, Indianapolis, 1896; aged 46; a Fellow of the American Medical Association; a member of the American Association of Physio-Medical Physicians and Surgeons; died at the Passavant Hospital, Jacksonville, Ill., March 1, following an operation.

Henry Rohling, M.D., St. Louis, Mo.; Missouri Medical College, St. Louis, 1883; aged 56; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; formerly professor of bacteriology at the University of Missouri; died at his home, February 19, from nephritis.

Died in the Service
AT CAMP DIX
LIEUT. HAROLD FRANKLIN MICKLEY, M.D.,
M. R. C., U. S. ARMY, 1890-1918

William Jabez Nickerson, M.D., New Bedford, Mass.; Bowdoin Medical School, Portland, Me., 1871; aged 73; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; a veteran of the Civil War; died at his home, March 6, from cerebral hemorrhage.

John Walter Costolo, M.D., Sidney, Ohio; Medical College of Ohio, Cincinnati, 1883; aged 65; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; formerly superintendent of the District Tuberculosis Hospital at Lima; died at his home, March 7.

James P. Hanner, M.D., Franklin, Tenn.; University of Pennsylvania, School of Medicine, Philadelphia, 1857; aged 82; formerly a Fellow of the American Medical Association; captain and surgeon of the Confederate Army from 1861 to 1865; died at his home, March 6, from pneumonia.

John Franklin Southmayd, M.D., Brooklyn; Columbia University College of Physicians and Surgeons, New York City, 1892; aged 49; formerly a member of the Medical Society of the State of New York; chief surgeon to the Brooklyn Union Gas Company; died at his home, March 12.

John Wesley Duncan, M.D., Atlanta, Ga.; Atlanta (Ga.) Medical College, 1868; aged 75; formerly a Fellow of the American Medical Association; a member of the Medical Association of Georgia; one of the oldest practitioners of Atlanta; died at his home, March 11.

Susan Maria Smith McKinney Steward, M.D., Wilberforce, Ohio; New York Medical College and Hospital for Women, Homeopathic, New York City, 1870; aged 72; a colored practitioner; resident physician of the Wilberforce University; died at her home, March 7.

Frank Roop Smith, M.D., Wilmington, Del.; University of Pennsylvania, School of Medicine, 1893; aged 62; also as analytical chemist of the College of Pharmacy of Philadelphia; died suddenly at his office while attending a patient, March 6, from heart disease.

Lieut. Claude A. Harmon, M.D., M. R. C., U. S. Army, Upton, Wyo.; Starling Medical College, Columbus, 1904; aged 38; for many years mayor of Upton; died at the State Hospital, Sheridan, Wyo., March 11, from injuries received in a railway accident.

Charles Augustus O'Dea, M.D., Erie, Pa.; Niagara University Medical Department, Buffalo, 1895; aged 43; formerly a Fellow of the American Medical Association; a member of

the Medical Society of the State of Pennsylvania; died at his home, March 9.

Rainford De Los Canedy, M.D., North Adams, Mass.; Columbia University, College of Physicians and Surgeons, New York City, 1896; aged 45; for many years a member of the city board of health; died at his home, March 11, from pneumonia.

Horatio Franklin Copeland, M.D., Whitman, Mass.; Harvard University Medical School, 1865; aged 75; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, January 8, from cerebral hemorrhage.

Charles Masters Cain, M.D., Indianapolis, Ind.; Indiana University School of Medicine, Indianapolis, 1909; aged 34; a member of the Indiana State Medical Association; died at the Methodist Hospital, March 8, from acute enteritis.

Lydia A. Bickford, M.D., New York City; New York Medical College and Hospital for Women, Homeopathic, 1894; aged 69; one of the oldest medical practitioners of the city; died at the New York Hospital for Women, March 9.

Elmo W. Hopson, M.D., Lockesburg, Ark.; Hospital College of Medicine, Medical Department, Louisville, 1906; aged 42; formerly a member of the Arkansas Medical Society; died at Horatio, Ark., January 13, from tuberculosis.

Marion Howard Casier, M.D., Detroit; Rush Medical College, Chicago, 1880; aged 67; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; died at his home, about March 4.

Elton J. Palmer, M.D., Philmont, N. Y.; Jefferson Medical College, Philadelphia, 1878; aged 68; formerly a member of the Medical Society of the State of New York; died at his home, March 9, from cerebral hemorrhage.

John Robinson Gildersleeve, M.D., Richmond, Va.; Medical College of Virginia, Richmond, 1864; aged 75; a Fellow of the American Medical Association; a veteran of the Civil War; died, March 5, from heart disease.

John S. Tryon, M.D., Rehrersburg, Pa.; University of Pennsylvania, School of Medicine, Philadelphia, 1857; aged 84; for many years a practitioner of Berks County; died at his home, March 6, from senile debility.

Edward Stanislaus Dougherty, M.D., Ashley, Pa.; Jefferson Medical College, Philadelphia, 1900; aged 42; a Fellow of the American Medical Association; died at his home, March 6, from cerebral hemorrhage.

William Lee Howard, M.D., Westboro, Mass.; University of Vermont, College of Medicine, Burlington, 1890; aged 57; formerly of Baltimore; and author of many books on sex hygiene; died in Boston, March 11.

Brig.-Gen. Charles Tripler Alexander, U. S. Army, retired, Washington, D. C., aged 84; a veteran of the Civil War; formerly in charge of the Medical Supply Depot, New York City; died at his home, March 1.

Ralph E. Moeser, M.D., Montrose, Ill.; Hahnemann Medical College, Kansas City Mo., 1910; aged 33; a member of the Illinois State Medical Society; died from injuries in an automobile accident, March 8.

Charles Seymour Bradley, M.D., Boston; New York University, New York City, 1873; a member of the Medical Society of the State of New York; died at his home, January 30, from heart disease.

Ellen M. Osburn, St. Louis, Mo. (license, Missouri, 1894); aged 50; founder and former head of the Ellen Osburn Hospital, St. Louis; died at the Mayfield Memorial Hospital, March 8, from cancer.

John H. Burrow, M.D., Milan, Tenn.; University of Nashville, Tenn., 1862; aged 84; for more than fifty years a practitioner of Gibson County; died at the home of his daughter in Milan, March 1.

Elijah Tracy Bishop, M.D., Smithsburg, Md.; University of Maryland, 1855; aged 85; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, March 11, from paralysis.

Allen B. Becker, M.D., Springwater, N. Y.; Baltimore University School of Medicine, 1890; aged 58; health officer of Livingston County, N. Y.; died at his home, January 14, from pneumonia.

Linn L. Kennedy, M.D., Washington, D. C.; Louisville (Ky.) Medical College, 1887; aged 46; for several years a practitioner of Louisville and Tuscaloosa, Ala.; died at his home, March 5.

John W. Smith, M.D., Vevay, Ind.; Chicago Homeopathic Medical College, 1885; aged 61; a member of the Indiana State Medical Association; died at his home, March 2, from arteriosclerosis.

Thomas D. Johnson, M.D., Clarksville, Tenn.; Washington University School of Medicine, Baltimore, 1869; aged 76; a veteran of the Civil War; died at his home, March 6, from senile debility.

Walter Barrows Hayward, M.D., Taunton, Mass.; Boston University School of Medicine, Homeopathic, 1897; aged 45; died at the Massachusetts Homeopathic Hospital, Boston, March 10.

George Ivan Pohek, M.D., Pittsburg, Kan.; University of Munich, Germany, 1882; aged 63; formerly a Fellow of the American Medical Association; died at his home, March 11.

Silas Stevenson, M.D., Ellwood City, Pa.; Western Reserve University, School of Medicine, 1868; aged 73; a veteran of the Civil War; died at his home, March 8, from senile debility.

Dudley Thomas Boyd, M.D., Ector, Texas; Vanderbilt University, Nashville, Tenn., 1892; aged 47; a Fellow of the American Medical Association; died at his home, February 9.

John W. Roberts, M.D., Irving, Texas; Fort Worth University Medical Department, 1910; aged 33; a Fellow of the American Medical Association; died at his home, March 9.

John A. Hagar, M.D., Gloversville, N. Y.; Albany (N. Y.) Medical College, 1890; aged 53; health officer of Fulton County, N. Y.; died at his home, March 6, from paralysis.

Elmer A. Doty, M.D., Oxford, Iowa; State University of Iowa, Iowa City, 1885; aged 67; a Fellow of the American Medical Association; died suddenly at his farm, March 7.

Alexander C. Fraser, M.D., Pasadena, Calif.; McGill University, Montreal, 1877; aged 60; for many years a practitioner of Manitowoc, Wis.; died at his home, March 7.

Arthur Rubel Keith, M.D., Rockford, Ill.; University of Pennsylvania, Philadelphia, 1907; aged 35; died at Utica, N. Y., February 21, from pulmonary tuberculosis.

Carl Flucks, St. Wendells, Ind. (license, Indiana, 1898); aged 70; a member of the Indiana State Medical Association; died at Perry, Ark., February 5, from pneumonia.

Rodington Stanhope, M.D., Lincoln, Neb.; Western Reserve University, School of Medicine, Cleveland, 1880; aged 81; died at his home, January 19, from pneumonia.

James W. Speer, M.D., Alton, Ky.; Miami Medical College, Cincinnati, 1867; aged 81; a veteran of the Civil War; died at a hospital in Frankfort, Ky., March 5.

Frederick Roesch, M.D., Chicago; University of Heidelberg, Germany, 1852; aged 88; died at the home of his daughter, March 21, from senile debility.

Harry D. Riordan, M.D., Kansas City, Mo.; Kansas Medical College, Topeka, 1908; aged 41; died in the Lafayette Hotel, Kansas City, about March 2.

James Randolph Humes, M.D., Hollidaysburg, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1874; aged 70; died at his home, March 9.

Marshall Robin Morden, M.D., Adrian, Mich.; University of Michigan, Ann Arbor, 1871; aged 73; died at his home, March 13, from senile debility.

Emory Valentine Buck, M.D., New York City; New York University Medical College, New York City, 1872; aged 75; died at his home, March 16.

John T. Moore, Mooresville, N. C. (license, North Carolina, 1898); died near Mooresville, March 12, from injuries received in an automobile accident.

Clarence Linden Howes, M.D., Hanover, Mass; Long Island College Hospital, Brooklyn, 1878; aged 69; died at his home, March 7, from pneumonia.

Benjamin P. Wilson, M.D., Lake Butler, Fla.; Charity Hospital Medical College, New Orleans, 1876; aged 66; died in Sneads, Fla., March 10.

Marriages

LIEUT. CARROLL SEMAN THOMSON, M. R. C., U. S. Army, Clinton, Mich., to Miss Ruth Ardele Hovarter of Chicago, March 21.

LIEUT. CARL HERMAN BARTLING, M. R. C., U. S. Army, Chicago, to Miss Katherine Stewart of York, N. Y., March 23.

ALFRED PFITSCH, M.D., Baltimore, to Miss Eva Margaret Williams of Federalsburg, Md., March 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticised

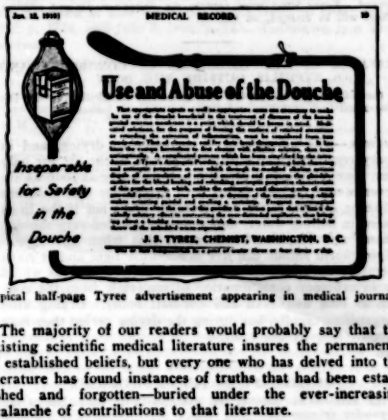
[FOREWORD.—The article that follows is the eighth[1] of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures advertised to physicians. Although the preparations taken up in this series have been dealt with in previous reports, the fact that they are still widely advertised and prescribed indicates the need of further publicity. The writer of the series is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE VIII.]

TYREE'S ANTISEPTIC AND ASEPTINOL

By S. Q. Lapius, M.D.

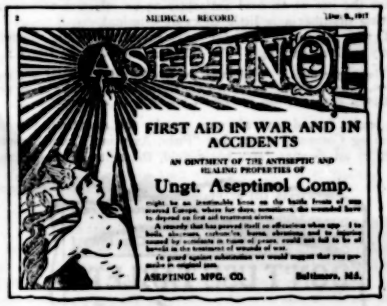
It may seem paradoxical to say that recent progress in the medical sciences has made therapeutic chaos possible, but it is true nevertheless. Revolutions are sometimes slow and orderly, sometimes sudden and attended with confusion. The revolutionary changes in the medical sciences have been so numerous and so rapid that the general practitioner has been unable to keep pace with them, and in the resulting confusion the nostrum maker has seen his opportunity for exploiting his useless, dangerous or unscientific preparations. The greater the confusion the greater his opportunity, and it is no exaggeration to say that he has been the most potent factor in maintaining the chaos of therapeutics.



Typical half-page Tyree advertisement appearing in medical journals.

The majority of our readers would probably say that the existing scientific medical literature insures the permanence of established beliefs, but every one who has delved into the literature has found instances of truths that had been established and forgotten—buried under the ever-increasing avalanche of contributions to that literature.

Rapid advances are still being made in the medical sciences and unless constant vigilance is exercised therapeutics will return to the chaotic condition from which it has so recently emerged. It was in recognition of these facts—the danger of this return to chaos, and the difficulty, in fact impossibility, of any individual keeping pace with all of the medical sciences—that the American Medical Association secured the cooperation of men in various branches of medicine in the Council on Pharmacy and Chemistry, in order that it may place the results of therapeutic progress before readers of THE JOURNAL in an impartial manner.


MEDICAL RECORD.
ASEPTINOL
FIRST AID IN WAR AND IN ACCIDENTS
AN OINTMENT OF THE ANTISEPTIC AND HEALING PROPERTIES OF
Ungt. Aseptinol Comp.
ASEPTINOL MFG. CO. Baltimore, Md.

Typical Aseptinol advertisement.

Are you profiting by this work, or are you still depending on your unaided efforts to distinguish the false teachings of the nostrum venders from that of scientific medicine? Are you prescribing "Antikamnia" and "Ammonol" or a simple member of the group such as acetanilid or phenacetin? Are you depending on "Tyree's Antiseptic," so called, or are you using an antiseptic about which there is no mystery, for which no false claims are made, and one which is really effective? In short, are you using drugs of unquestioned value, such as are described in "Useful Drugs" or are you taking your therapeutic instructions from nostrum makers' circulars?

Perhaps you have been led to believe that the Council on Pharmacy and Chemistry is composed of "theorists" and that the nostrums represent the work of "practical men." Every one should strive to be practical, of course, and it is worth while to inquire whether scientific experimenters, who so largely mold medical literature, should be termed theorists, or practical men. A practical man practices that which is useful in the treatment of the sick, and he must determine who is capable of furnishing him with a better materia medica. A perusal of medical literature will convince any unbiased mind that medical science progresses only by means of experiment, hence experimenters must be considered the really practical men while those who cling to outworn theories are really the "theorists."

When Lister introduced antiseptic methods into surgery he inaugurated a veritable revolution, which afforded the nostrum makers opportunities for reaping rich harvests through the exploitation—under extraordinary claims—of cheap mixtures of little, or no, value. There is no lack of antiseptics of extraordinary activity in the test tube that are practically harmless to man, and it would seem natural to suppose that such antiseptics could be used to control the development of bacteria in such diseases as typhoid fever, but, unfortunately, such hopes have not been fulfilled. Ehrlich experimented with many phenol derivatives that showed decided antiseptic activity in the test tube, in the hope that he might find some that could be used to combat such common diseases as diphtheria and typhoid fever, but while many of these are of low toxicity for man, he was unable to find even one that could be used effectively in the treatment of any of these diseases. His discovery of arsphenamin

1. The previous articles of the series are "Bell-ans," THE JOURNAL, Nov. 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Pepto-Mangan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918; "Ammonol and Phenalgin," Feb. 2, 1918; "Fellows' Syrup and Other Preparations of the Hypophosphites," Feb. 16, 1918; "Shotgun Nostrums," March 2, 1918.

("salvarsan") resulted from quite another type of investigation.

Many practitioners lose sight of the essential difference between antiseptics and disinfectants and employ antiseptics in cases where only a disinfectant action would be of value. An antiseptic does not destroy bacteria, it merely inhibits their growth, and when it is diluted too much it loses its effects and the bacteria may begin to multiply as though no antiseptic had been used. This is especially true after the use of weak antiseptics in the mouth. These are soon diluted or removed by the saliva, and the bacteria continue to multiply with only a momentary interruption at best, hence to advise the use of an oral antiseptic as an effective means of treating diphtheria is little short of criminal.

"Tyree's Antiseptic Powder" was submitted to the Council nearly twelve years ago. The label on the package stated:

"This preparation is a scientific combination of borate of sodium, alumen, carbolic acid, glycerin and the crystallized principles of thyme, eucalyptus, gaultheria and mentha in the form of a powder."

A leaflet issued several years ago by the Aseptinol Manufacturing Company states that "Pulv. Aseptinol Comp." combines in an elegant form boric acid, the salts of aluminum,

One of the older newspaper advertisements of Tyree Antiseptic Powder.

crystallized phenol, and the active crystalline principles of thymus, mentha and gaultheria.

A comparison of these formulas would justify the designation of the two preparations as twins, but even a twin can have a wart where the other lacks it. The formula of Pulv. Aseptinol Comp. given in the leaflet also includes hydrastis canadensis, but we believe that a wart would be quite as much of an addition to the anatomy of man as the hydrastis is to this already preposterous formula. Similar as the formulas of these two nostrums were said to be, the general methods of exploiting them were even more similar. A partial list of the diseases for which each has been recommended by its exploiters shows the similarity of methods pursued:

TYREE'S WAS SAID TO BE USEFUL IN THE TREATMENT OF:	PULV. ASEPTINOL COMP. WAS SAID TO BE USEFUL IN THE TREATMENT OF:
Leucorrhea	Leucorrhea
Gonorrhea	Gonorrhea
Vaginitis	Vaginal inflammation
Pruritus	Pruritus
Ulcerated conditions of the mucous membrane	Ulceration of vagina or cervix
Scrofulous ulcers	Chronic ulcers
Syphilitic ulcers	Prophylactic against specific disease
Disinfecting offensive cavities	Cleansing pus cavities
Deodorant	Deodorant
Profuse and offensive perspiration	Checks abnormal secretion

We stated that the formula furnished by Tyree was that given above, but the Council was never able to learn when Tyree actually employed the formula except for advertising purposes, and analysis of the powder showed that Tyree's Antiseptic Powder was essentially a mixture of boric acid and sulphate of zinc, with insignificant amounts of odorous principles.

A remarkable fact brought out in the course of the consideration of the preparation by the Council was that Tyree admitted that he had changed the formula without having published the new one. The Council then showed that a specimen of the "antiseptic" that had been kept in a retail drug store for several years was essentially similar to that sold at the later date. Thus it would seem that Mr. Tyree had been making his powder by one formula and publishing an entirely different one for years before the Council published the facts in the case.

If Tyree found it necessary to change the formula of his powder—if indeed, he ever used the published formula—why did the Aseptinol Manufacturing Company adopt it, or one so closely resembling it?

It is obvious that both of these twin nostrums are utterly unfit for treating the various conditions for which they are or have been recommended, and in view of the misrepresentation in one case, it is difficult to understand why it should be taken as the model for the other. Do physicians believe that a simple mixture of boric acid and zinc sulphate, or a mixture such as that given in the formula of "Aseptinol" powder, is in any way superior to a prescription such as any physician could write?

There is a far more important question to consider than the relative merits of such nostrums and a prescription of the physician's own devising, and that is whether the medical profession is going to help to perpetuate the chaotic conditions that the use of such nostrums foster or to assist in therapeutic progress by maintaining its independence of such false teachers, and seeking to aid in the establishment of a rational use of drugs and remedial measures.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESISTANCE OF THE ORGANISMS OF GONORRHEA AND SYPHILIS OUTSIDE THE BODY

To the Editor:—Please publish the opinion of authorities on the life of gonorrheal and syphilitic organisms outside the human body.

H. T. M.

ANSWER.—The gonococcus is sensitive to drying, and in ordinary conditions can survive exposure to the air for only a short time, although in dried pus it may live as long as six or seven weeks. Linen soiled with discharges may transmit the disease after a fairly considerable time; but if the linen is placed in boiling water, the organism is killed very rapidly.

Zinsser and Hopkins have shown that when kept moist, the *Spirochaeta pallida* can live in a diffuse light and at room temperature under conditions of mixed culture, such as would occur in ordinary contamination of materials from the condition, as long as eleven and one-half hours. Drying kills the organisms rapidly, but during the drying period they may survive as long as one hour.

COMPATIBILITY OF PHENOLPHTHALEIN

To the Editor:—Are calomel and phenolphthalein compatible in the same powder or capsule?

GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—A reply to this query was published in THE JOURNAL, Feb. 8, 1913, p. 466. In brief, it is better not to combine several laxatives, but for those who believe in doing this it is easy to combine with phenolphthalein most drugs

that can properly be prescribed in powders or pills. There appears to be no reason why calomel should not be combined with this drug so far as chemical compatibility is concerned; and since both are tasteless, they may be prescribed together either in the form of powder or enclosed dry in capsule, cachet or wafer. However, the discriminating physician will estimate the amount of each ingredient according to the susceptibility of the patient, and if phenolphthalein is depended on as the active laxative, the mixture should be made for only a few doses in order that the amount of phenolphthalein may be changed without unduly large doses of the other ingredients being given.

ACTIVITY AFTER INJURY TO HEART

To the Editor:—Please give your opinion in the next issue of THE JOURNAL as to whether a man, 31 years of age and in previous good health, who had received the injury described below, could walk or run a distance of approximately 254 feet after the infliction of the injury described? A bullet entered the body 2 inches above and 1 inch to the right of the right nipple, thence passed through the right lung, the heart and left lung, and passed out of the chest and lodged under the skin in the left axilla. Blood was found in both chest cavities, and the pericardium contained loose blood. H. W. B.

ANSWER.—It is impossible to answer definitely this particular hypothetic question. There are, however, authentic reports of cases in which persons have been able to walk or run considerable distances after heart injuries. Paré records the case of a soldier who received a blow from a halberd which punctured the left ventricle and who walked to the surgeon's tent to have his wound dressed, and then to his own tent 250 yards away. Roberts (*Richmond and Louisville Medical Journal*, 1871, 12, 2607) describes a man who ran 60 yards and lived one hour after being shot through both lungs and the right auricle.

HEAT CRAMP

To the Editor:—In one of the 1908 issues of THE JOURNAL, Dr. D. S. Edsall had an article dealing with heat stroke and heat cramps. Can you give me any information pertaining either to his works or to other works along this line, either in pamphlet or in book form? I am especially interested in the question of heat cramp in industrial workers. A. P. HANCUFF, M.D., Youngstown, Ohio.

ANSWER.—The article by Edsall appeared in THE JOURNAL, Dec. 5, 1908, p. 1969. Queries and Minor Notes on this subject appeared in THE JOURNAL, June 1, 1912, p. 1706; Nov. 9, 1912, p. 1734, and July 8, 1916, p. 143. Following is a list of references:

Oliver, Thomas: Dangerous Trades, New York, E. P. Dutton & Co., 1902, p. 184.
Welsh, H. M.: Muscular Spasm Due to Muscular Exertion in a Heated Atmosphere, THE JOURNAL, April 10, 1909, p. 1179.
Cameron, W. H.: A Disorder Due to Exposure to Intense Heat, THE JOURNAL, May 8, 1909, p. 1483.
Gatewood, J. D.: Naval Hygiene, Philadelphia, P. Blakiston's Son & Co., 1909, $6.
Anders, J. M.: Practice of Medicine, p. 1290.
Clendening, Logan: Muscular Spasms Due to Heat Occurring in Cooks, Especially on Pullman Diners, THE JOURNAL, May 7, 1910, p. 1517.
Rennie, W. H.: *South. Med. Jour.*, February, 1911.
Fiske, C. N.: Effect of Exposure to Intense Heat in Working Organism, *Am. Jour. Med. Sc.*, April, 1913.
Watkins, J. A.: Heat Hazards in Industries, *Pub. Health Rep.*, Dec. 14, 1917.

Diathermy in Treatment of Gonorrhea.—According to an abstract in the *Correspondenz-Blatt*, Müller has recently reported excellent results from application of diathermy in treatment of gonorrhea in the male in 175 cases. He ascribes the benefit more to the hyperemia and the loosening up of the tissues than to the direct destruction of the gonococci by the heat. Hence he follows the diathermy with injection of warm disinfectants, as the mucosa is practically sensitized by the preceding diathermy. He found that this combination was effectual even in old chronic cases and with inflammatory processes in the prostate, seminal vesicles and epididymis; the urine cleared up and the tendency to sexual neurasthenia subsided. In his communication in the *Dermatologische Wochenschrift*, he insisted that no injurious by-effects of any kind were observed.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 2. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.
ARKANSAS: Little Rock, May 14. Sec., Dr. T. J. Stout, Brinkley.
ARKANSAS (E): Little Rock, May 14. Sec., Dr. C. E. Laws, Ft. Smith.
COLORADO: Denver, April 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.
IDAHO: Pocatello, April 2-3. Sec., Dr. Ray H. Fisher, Rigby.
MINNESOTA: Minneapolis, April 2-4. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.
MONTANA: Helena, April 2. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.
NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.
NEW MEXICO: Santa Fe, April 8. Sec., Dr. R. K. McClanahan, East Las Vegas.
OKLAHOMA: Oklahoma City, April 9-10. Sec., Dr. J. J. Williams, Weatherford.
RHODE ISLAND: Providence, April 4-5. Sec., Dr. B. U. Richards, State House, Providence.
UTAH: Salt Lake City, April 1-2. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Arkansas Eclectic November Examination

Dr. C. E. Laws, secretary of the Arkansas Eclectic Medical Board, reports the written examination held at Little Rock, Nov. 13-14, 1917. The examination covered twelve subjects and included 120 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgia Coll. of Eclectic Med. and Surg.	(1915)* 84.4; (1916)		84.7
Kansas City College of Med. and Surg.	(1917) 77.1, 78, 86.4, 81.1, 86.3		

*Graduation not verified.

Kentucky December Examination

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Dec. 4-6, 1917. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 9 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Louisville	(1916) 78, 78; (1917) 79, 85, *		
Lincoln Memorial University	(1917)		80
Meharry Medical College	(1916) 73; (1917) 71, 72		
	FAILED		
University of Louisville	(1912)		66
Lincoln Memorial University	(1911) 63; (1917)		62

* No grade given.

Louisiana December Examination

Dr. E. W. Mahler, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 6-8, 1917. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 18 candidates examined, 9 passed and 9 failed. Four candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1916)		79.9
Tulane University of Louisiana	(1917) 76.2, 76.6, 76.7, 77, 87.1,		88.7
University of Pennsylvania	(1903)		87.6
Baylor University	(1916)		80.3
	FAILED		
Tulane University of Louisiana	(1917)		70.1
Meharry Medical College	(1916) 69.5; (1917)		40.9
Memphis Hospital Medical College	(1908) 62.3; (1911)		60.1
University of Memphis	(1911)		58
University of Tennessee	(1913)		51.5
Fort Worth School of Medicine	(1917)		71.7
University of Nicaragua	(1909)		69.5

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Detroit College of Medicine and Surgery	(1917)		Michigan
John A. Creighton Medical College	(1910)		Nebraska
University of Tennessee	(1916) (1917)		Arkansas

Book Notices

THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, Emeritus. Third Edition. Cloth. Price, $7. Pp. 1243, with 466 illustrations. New York: D. Appleton & Co., 1917.

The author has completely revised this book, and has elaborated on many subjects, particularly pellagra and syphilis. One of the best sections of the work is the preliminary chapter on the anatomy of the skin, illustrated by twenty-nine excellent pictures, and presenting material which should be known to every physician who attempts to treat disorders of the skin. The section on treatment is probably more conservative and rational than that appearing in any other textbook on diseases of the skin. The prescriptions given are simple, and few contain the numerous ingredients that so frequently mark dermatologic prescriptions.

Particularly interesting is the view that the author holds of vaccine therapy:

> The method of treatment by the use of vaccines has so appealed to the medical imagination, and the use of stock vaccines has been made so easy by the manufacturers of bacteriologic products, that vaccine therapy has had an enormous vogue. . . . As dermatologists have had experience with the method in the last five years it has lost ground in their confidence, and this failure to hold its place as an efficient remedy among dermatologists is perhaps the best evidence of the inefficiency of the method. In so far as the use of vaccines has tended to encourage the indifference to other details of treatment, and a slipshot and indiscriminate therapy, they have been actually harmful.

The discussions on the use of the roentgen ray, radium and light therapy are equally conservative, the advantages and disadvantages being pointed out in definite, positive statements. In his discussion of the etiology of pellagra, the author does not seem to accept wholly either the deficiency, the maize or the parasitic theory, although he states that the theory that pellagra is caused by a parasite and transferred by some biting insect has much to commend it. This was probably written some time ago, as the more recent work of the United States Public Health Service indicates that the deficiency theory should receive more prominence. The section on syphilis has been greatly extended and covers 156 pages. It includes an article on the Wassermann reaction by Dr. A. W. Stillians, and is a veritable treatise on this most important condition.

There are 466 halftone illustrations in the book, but none in colors, which detracts somewhat from the value of the book for those not especially familiar with the appearance of dermatologic lesions.

A TREATISE ON REGIONAL SURGERY. By Various Authors. Edited by John Fairbairn Binnie, A.M., C.M., F.A.C.S. Three Volumes. Cloth. Price, $7 each. Philadelphia: P. Blakiston's Son & Co., 1917.

This is a three volume work on regional and special surgery. That part of general surgery which relates to the principles of pathology and therapy has been omitted. The aim of the work is to present short treatises on the injuries and diseases of the different regions of the body. It is a work of many authors, each dealing with a different subject or subjects. The editor admits that there is overlapping and repetition, but says that "when it occurs it is interesting and instructive to note the differences in the views expressed by the different authors." The editor thinks this is an advantage; we would regard it as a disadvantage. In a review of a work covering so many subjects and by so many authors it is impossible to take up in detail the various opinions expressed. One general feature that is quite noticeable and commendable is that the authors enter at once on the subject in hand, without wasting time and space with the usual commonplace introductory remarks. What the authors have to say they say in a few words and stop. Sometimes they quit before the subject is really covered. As is usual in composite works, some articles stand out prominently by reason of their excellence, while others, by comparison, are mediocre. The editor might have used his privilege occasionally and substituted proper pharmacopeial for proprietary or trade names. The volumes are of convenient size, about 600 pages each, and are well illustrated.

Social Medicine, Medical Economics and Miscellany

Anthrax

The augmented importation of skins and hides from foreign countries as the result of the leather shortage due to the war has caused, as one of its by-effects, an increase in anthrax among those handling hides, skins and their accompanying products, hair and wool. So serious has been the increased incidence of this disease that state and local health authorities and the national government through the Department of Agriculture and the Public Health Service are giving it increased attention. The Department of Agriculture has increased the stringency of its regulations regarding the importation of hides which may be the source of infection, so that the tanners have been compelled to consider the subject especially as it affects their industry.

The Journal of the American Leather Chemists' Association for August, 1917, publishes a symposium read at the annual meeting of the association this year. After giving a description of the disease, its lesions and symptomatology, Dr. A. S. Ross of Camden, N. J., says that for two years he has been practicing, as a prophylactic, the cauterization with phenol (carbolic acid) of all wounds found on employees and then applying alcohol dressings. All employees handling raw hides, on pain of immediate discharge, are compelled to have all wounds, no matter how trivial, treated without delay by this method, and in Camden, where from 7 to 9 million skins are handled in the raw state each year, this method has proved effective in preventing trouble. Ross believes that if he can treat a patient within twelve hours from the first appearance of the lesion, he can save the patient. Of the three surgical methods of treating the local lesion—excision, a crucial incision and cauterization with phenol, and the injection of pure phenol around and into the pustule—Ross says that the first method is the best. On account of the extreme rapidity of the development of the constitutional infection and symptoms of the greatest gravity, the serum treatment must be employed vigorously. He uses Sclavo's serum, made from ass' blood, and Mulford's horse serum. The serum treatment employed early has reduced the mortality to 6 per cent. Ross says that in Camden he has never seen a case develop from contact with another patient, even though quarantine measures are not enforced and close contact with the patient by other members of the family is not prohibited. H. J. Frisbie, another tannery physician, endorses the excision of the pustule, cutting deep and wide, swabbing out the wound with tincture of iodin, packing with the same drug, and later applying a 1:2,000 mercuric chlorid dressing, together with sufficient doses of anthrax serum and quinin. He has had no deaths among his patients, and many of them are out in four or five days. A. Parker Hitchens describes the method of production of the serum and the manner in which it acts to immunize or cure the patient.

It has been found that the effluent from tanneries has been the means of infecting stock on streams below the plants, and on account of strict state and other regulations the tanneries have been compelled to devise means of treating or disposing of the effluent to avoid the possibility of such infection. Mr. Buswell describes the results of experiments conducted in a large tannery in the treatment of the waste by means of a screen to take out the hair and other solid matter, and the application of liquid chlorin, 50 parts per million of the screened effluent. By this means, although not all of the resistant anthrax spores were killed, they were sufficiently attenuated so that they did not kill guinea-pigs. Practically this treatment resulted in freedom from anthrax as far as

infection from this tannery is concerned. C. Lee Peck describes the method employed for treating the sludge and effluent in a tannery with which he is connected. This tannery has experimented with a small unit treating 50,000 gallons of waste a day by means of sedimentation tanks, from which the sludge is skimmed and burned before bacterial action has destroyed it, the clarified effluent being spread and absorbed by the earth, no part of it going directly into any stream.

Effect of Freezing on Typhoid and Diphtheria Organisms

To determine the length of time typhoid and diphtheria organisms would live in ice cream that had been frozen solid, Bolten of the Public Health Service made some experiments which are described in *Public Health Reports*, Feb. 8, 1918. Pasteurized ice cream was placed in sterilized metal containers, inoculated with twenty-four-hour broth cultures of *B. typhosus*, and frozen in brine. After twenty-four hours the ice cream was partially melted, Endo plates inoculated and incubated for twenty-four hours. This was kept up daily thereafter for a number of days. After twenty-four hours, cultures of typhoid were fished from the plates and placed in nutrient broth and Russell slant tubes. In twenty-four hours with these cultures agglutination tests were made, with accompanying controls. One drop of a higher titer antityphoid serum was placed in the test tube and the tube incubated for half an hour at 37 C. At the end of the period all of the tubes to which the serum had been added showed a heavy flocculent precipitate. The number of colonies per plate at first was large; after ten days or two weeks there were half the number, and at the end of a month the colonies were few.

Eight specimens of diphtheria bacteria from clinical cases of diphtheria were isolated in pure cultures by plating on agar and fishing for Loeffler slants. Cultures of these were made for twenty-four hours at 37 C., washed off with 10 c.c. of 0.85 per cent. salt solution and the suspension placed in sterilized metal containers and frozen in brine. After twenty-four hours they were melted and the material inoculated in a Loeffler blood serum slant, incubated at 37 C. and again frozen. The process was repeated the following day and the cultures of the inoculated tubes of the preceding day examined. In all cases diphtheria bacilli were obtained. The freezing was continued for six days and diphtheria organisms recovered each day. Other tests failed to show any difference in toxin production between frozen and unfrozen cultures.

Veronal Classed as a Poison by England

Dec. 5, 1917, the Pharmaceutical Society of Great Britain recommended to the Lords of the Privy Council that veronal and its closely related derivatives be classed in Part 1 of the schedule to the Poisons and Pharmacy Act, 1908. The recommendation was prompted by the cumulative evidences, as revealed through coroners' inquests, press reports, etc., of "a steady increase in the number of fatal poisonings from veronal. . . . In addition, a growing body of testimony showed that hypnotics of this class were being widely taken in excess by the laity, without medical knowledge or supervision, with the most disastrous consequences to health and morals" (editorial, the *Pharmaceutical Journal and Pharmacist*, Dec. 22, 1917, p. 293). The Privy Council, six days later, signified its approval of the recommendation, thereby legally classifying as poisons "diethyl-barbituric acid, and other alkyl, aryl, or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, or by any other trade name, mark or designation; and all poisonous urethanes and ureides." An immediate result will be that veronal will seldom be dispensed except on a physician's order, and that a record of such sales will be kept in the pharmacist's poison book. (The official name for diethyl-barbituric acid of the British Pharmacopeia is barbitone; in the United States the designation for this product, under which it may be manufactured under license of the Federal Trade Commission, is barbital.)

Medicolegal

Sufficient Provision and Notice as to Medical Attendance

(In re Davidson (Mass), 117 N. E. R. 310)

The Supreme Judicial Court of Massachusetts, in this proceeding against a manufacturing company and an employers' liability insurance company, affirms a decree denying a physician's claim under the workmen's compensation act for services rendered by the physician in treating an employee of the manufacturing company for injuries received by the employee arising out of and in the course of his employment. The court says that the facts disclosed by the record were that arrangements had been made with a hospital to furnish to employees of the manufacturing company, injured in the course of their work, necessary medical and surgical treatment, and that notices to that effect were posted conspicuously in different places in the manufactory of the insured employer. The employee immediately on being injured was urged to go to the designated hospital. He replied that he "did not want to bother," but finally consulted a physician of his own selection not connected with the hospital. The physician contended that the notices posted were insufficient in not stating that the injured employee "must" go to the hospital. That contention was not sound. A notice of that tenor would not be true. The statute imposes an obligation on the insurer to furnish reasonable medical attendance. It does not make it imperative on the employee to accept such attendance. He is at liberty under the act, if he prefers to do so, to secure at his own expense medical attendance of his own selection. The notices posted in the manufactory of the employer were amply sufficient. They gave the name and location of the hospital where both "medical and hospital attendance" were furnished for injured employees. The decision of the industrial accident board to the effect that the insurer was not liable to the physician selected by the employee was plainly right. The insurer had done all that the act required of it in providing reasonable medical attendance.

Liability for Negligence of Intern or Other Physician Given Charge of Case

(Norton vs. Hefner et ux. (Ark.), 198 S. W. R. 97)

The Supreme Court of Arkansas, on this appeal of defendant Norton, a physician and surgeon, reverses a judgment that was obtained against him by the plaintiffs, husband and wife, and remands the case for a new trial, because of an instruction that was given the jury with regard to the defendant's liability for the negligence of an intern. The court says that the action was to recover damages for injuries resulting from alleged improper treatment following a surgical operation performed by the defendant on Mrs. Hefner, who was afflicted in a way that required a surgical operation involving an incision and entrance into the abdominal cavity. After the operation had been completed the defendant, who had come from another place to perform it, announced that he could not remain any longer, but would have to return to his home, and the question arose between the parties as to who should look after the patient and dress the wound. There was testimony adduced by the plaintiffs which tended to show that the defendant arranged with a young physician, who was acting as an intern in the hospital, to look after the patient until she recovered, and the judgment in this case was based entirely on the theory that the intern was guilty of negligence in failing to remove the gauze at the proper time, and that the defendant was liable in damages because of the alleged negligence of the intern. The trial court, over the objection of the defendant, instructed the jury, in substance, that if the defendant employed the intern to take charge of the patient for the purpose of dressing the wound and removing the gauze at the proper time, and that the intern was guilty of negligence in failing to remove the gauze properly, the defendant would be liable, and that it was wholly immaterial whether the defendant paid or agreed

to pay the intern for his services. There was no testimony in the case that the defendant employed the intern, in the sense that he was to pay him anything for his services; but the evidence merely tended to show that the intern, at the request of the defendant, agreed to take care of the patient. According to the undisputed evidence, the defendant left the city shortly after the operation was completed, and did not see the patient any more; nor was there any testimony tending to show that the defendant was guilty of any negligence in the selection of the intern as a proper person to look after the patient and remove the gauze. The intern was a physician who had been selected by the hospital management to attend patients in the hospital, and there was nothing to indicate that he was lacking in qualification for the position. The evidence adduced and the instructions of the trial court presented squarely the question of whether or not a physician is liable in damages on account of negligence of another physician who takes charge of a patient at his request. That question seems to have been settled against the right to recover damages under those circumstances by a decision of this court in *Keller* vs. *Lewis*, 65 Ark. 578, 47 S. W. 755. It was clear that the instructions of the trial court as to liability on the part of the defendant were erroneous. The defendant was not guilty of negligence in the performance of the operation, or in the selection of a physician to continue the treatment after he left the city. Not being negligent in those respects, he could not be held responsible for the negligence of the other physician, who was left in charge, merely because the other physician took charge on his suggestion and arrangement. There was testimony adduced tending to establish an express agreement on the defendant's part to look after the treatment in connection with the other physician who was left in charge of the patient, and to make himself responsible for the latter's conduct and treatment of the patient; but the instructions given by the trial court did not make the plaintiffs' right of recovery depend on the existence of such contract.

Waiving of Privilege

(Jacobs vs. City of Cedar Rapids (Ia.), 164 N. W. R. 891)

The Supreme Court of Iowa, in affirming a judgment for damages in favor of the plaintiff for personal injuries alleged to have been caused by a fall on a sidewalk, says that the sole point urged for reversal was sustaining an objection to the testimony of a physician on the ground that it was incompetent for being a breach of privilege. The argument was, in effect, that the necessary relation did not exist, or, if it did, that testimony given by the objecting party and her witnesses waived the privilege. The plaintiff testified that before her injury she was in good health and able to do and doing all kinds of work. A medical witness for her said that after the injury he found an infection which must have existed before the injury; that it might not have ultimately required operation on her if she had not suffered the injury complained of, but that such injury aggravated the infection and precipitated the operation. Thereupon a physician witness for the defendant testified that he had in the past attended the plaintiff as her physician on several occasions and on each had given her medical treatment. It was contended that, as against the objection that same was privileged, he should have been allowed to say for what he gave her such treatment. A distinctive point in this case was that the plaintiff testified, "I did not consult any doctors in regard to my health before my accident." Had this been said in her examination in chief, the court would be constrained to hold that the relation which created the privilege did not exist, and this though the physician testified it did exist. Moreover, the court is of the opinion that when the plaintiff testified, though on cross-examination, that no relation existed on which the claim of privilege could rest, she settled, at least for that trial, that her objection to the medical witness for the defendant being allowed to testify was not well taken, though so far as testimony on cross-examination reveals the state of a plaintiff's health, its giving does not waive privilege. However, the exclusion of the physician's testimony did not constitute reversible error, as there was no statement of what it was believed or expected would be said if the witness were permitted to answer.

Concerning waiving of privilege, the court says that the keeping in mind of the policy and object of the statute, and that it should be liberally construed to effectuate and attain these, have developed what will *not* waive the privilege. It was the legislative intent that the patient might confide freely, and was not to be deterred therefrom by fear that this confidence would create opposing testimony. There is no punishment provided for the physician who reveals what has been confided in him. About all, then, that the statute could have aimed to do was to prevent revealing on the witness stand. It must have been understood by the legislature that those who made confidential revelations to physicians might enter into, and produce testimony in, litigation, wherein it would be very material, either as impeachment or otherwise, to have the physician disclose what he had been told, and it must have been intended, therefore, that the occurrence of these conditions should not operate to waive the privilege. It has therefore been held that such testimony is not made admissible because it will impeach, or because it will operate to defeat falsehood. And that the naked fact that the plaintiff makes a witness of one of her physicians does not give consent that the defendant may make one of any or all other of the plaintiff's physicians, and have them testify on the same general subject to which the witness of the plaintiff spoke. These cases are not inconsistent with those in which waiver arises from the nature of the lifting of the veil, and not from what sort of witness the plaintiff lifts it with. On this some narrow exceptions have been grafted, as where a physician is sued for malpractice, and the plaintiff gives her version of the treatment received; or where exclusion would operate as a shield to crime. A waiver of privilege as to one transaction will not operate to waive it as to other and independent transactions.

Basis on Which Opinion May Be Expressed as to Sanity

(Hahn vs. Hammerstein et al. (Mo.), 198 S. W. R. 833)

The Supreme Court of Missouri, in reversing a judgment obtained by the plaintiff in this action to contest a will, makes a point of the fact that a physician who had attended the testator in the few instances of his illness, and to whom a hypothetic question was put, was not asked his judgment or opinion of the sanity of the testator based on the facts observed by him during social acquaintance; for the court says that he, equally with any lay witness, might express an opinion on that subject on a statement of facts showing the basis of such opinion.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, CHICAGO, JUNE 10-14.

Alabama State Medical Association, Birmingham, April 16.
Am. Assn. of Pathologists and Bacteriologists, Philadelphia, Mar. 29-30.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Orthopedic Association, Washington, D. C., April 22-23.
Arizona Medical Association, Phoenix, April 25-26.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
California State Medical Society, Del Monte, April 16-18.
Connecticut State Medical Society, Hartford, May 15-16.
Georgia State Medical Association, Savannah, April 17-19.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Louisiana State Medical Society, New Orleans, April, 16-18.
Maryland Medical and Chir. Faculty of Baltimore, April 23-25.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
North Carolina State Medical Society, Pinehurst, April 16-18.
Oklahoma State Medical Association, Tulsa, May 14-16.
South Carolina Medical Association, Aiken, April 16-18.
Tennessee State Medical Association, Memphis, April 9-11.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1918, 155, No. 2

1 *Sociologic and Medical Study of Four Hundred Cigar Workers in Philadelphia. T. G. Miller, Philadelphia.—p. 157.
2 *Electrocardiographic Observations in Toxic Goiter. E. B. Krumbhaar, Philadelphia.—p. 175.
3 Roentgenologic Studies in Healing of Gastric and Duodenal Ulcers. W. W. Hamburger, Chicago.—p. 204.
4 *Chemical Analyses of Stomach Contents from One Hundred Pellagrins. M. H. Givens, New Haven, Conn.—p. 221.
5 *Incidence of Chronic Focal Infection in Chronic Diseases. L. Langstroth, San Francisco.—p. 232.
6 *Electrocardiographic Study of Two Cases of Nodal Rhythm Exhibiting R-P Intervals. J. D. Heard, Pittsburgh and A. E. Strauss, St. Louis.—p. 238.
7 *Pathogenesis of Infantile Scurvy; Hypothesis. H. J. Gerstenberger, Cleveland.—p. 253.

1. **Sociologic and Medical Study of Cigar Workers.**—The literature on the effects of working in tobacco favors the view that it predisposes the worker to pulmonary tuberculosis, gastro-intestinal disturbances, anemia, genital abnormalities, and nervous conditions. In a study of the social and medical conditions of 400 cigar workers in Philadelphia, Miller did not find support for any of these contentions. They did find, however, some wearing of the teeth and some pharyngeal and conjunctival congestion, findings which they believe to be dependent on faulty personal and factory hygiene.

2. **Electrocardiographic Observations in Toxic Goiter.**—Electrocardiographic studies have been made by Krumbhaar of 51 cases of goiter, mostly of the toxic type, in as many cases as possible both before and after surgical operation. In the series of 47 patients that submitted to surgical operation (ligation, partial excision, and enucleation of adenomas) 3 deaths occurred; 2 of these offered no premonitory signs in either clinical or electrocardiographic examination; in the third case the development of negative T waves might have served as an adequate warning. Electrocardiograms, essentially normal as to form and rhythm, were found in 22 cases (43 per cent.). Preponderating hypertrophy of the right ventricle (or a tendency thereto) was found in 11 cases, and of the left ventricle (or a tendency thereto) also in 11 cases. After operation, however, one half of the right ventricular cases showed a diminished degree of preponderance, whereas all but one of the left ventricular cases showed either no change or an increased amount of preponderance. Cardiac arrhythmia was found as follows: sinus arrhythmia, 4 cases; ventricular extrasystoles, 3 cases; auricular fibrillation, 3 cases; auricular flutter, 1 case; delayed conductively, 2 cases.

4. **Stomach Contents of Pellagrins.**—A careful review of the 100 cases examined by Givens covering over 300 analyses for acidity and pepsin, permits of the following summary: No definite relation can be found between the absence of pepsin and free hydrochloric acid, and sex, age, duration of pellagra and clinical symptoms. The gastric secretion of children is disturbed along the same general line as that of adults. Free hydrochloric acid and pepsin do not seem to be absent as often in children as in adults. Although the tendency is for acid and pepsin to disappear hand in hand, such is not always the case. It is believed that pepsin and free acid are present more often than has been expected.

5. **Focal Infection in Chronic Diseases.**—Reviewing his cases Langstroth finds that 84 per cent. of ulcer patients, 66 per cent. of acute or subacute cases of arthritis, 73 per cent. of the chonic cases of arthritis, and 100 per cent. of the gallbladder cases have been associated with chronic focal infections. The acute and subacute cases have responded well after removal of the foci, even to the point of absolute cure. The chronic cases, when they should be followed have in many cases had less pain and no further progression of the disease.

6. **Rhythm Exhibiting R-P Intervals.**—Two cases are presented by Heard and Strauss in which electrocardiographic study showed the development of transient nodal rhythm. The first case exhibited junctional premature contractions and typical attacks of paroxysmal tachycardia such as had extended over a period of twenty years; the second presented marked sino-auricular block, and under ether anesthesia there developed a paroxysm of auriculoventricular rhythm. During the paroxysms of abnormal rhythm there was present in both cases an R-P interval indicating an origin of impulses low in the conduction tissues. The comparatively rapid rates during the paroxysms of auriculoventricular rhythm suggest an abnormal stimulation of the junctional tissues.

7. **Pathogenesis of Infantile Scurvy.**—A report is made by Gerstenberger of a case of infantile scurvy which showed a marked reduction in the water output of the body through the kidneys without the presence of the usual and known causes for water loss via other channels, and which further showed a marked change toward a return to normal conditions by the administration of orange juice, indicating a protective salt retention of hindered salt excretion as the cause of the transfer of a good portion of the water excretion from the kidneys to the lungs. The same condition seemingly was present in four additional cases of infantile scurvy as well as in scorbutic guinea-pigs on an oat-and-water diet. It is suggested that the phenomenon observed is a part of the regular picture of infantile scurvy and represents an addition to the clinical symptomatology of scurvy. A case of infantile scurvy is reported as being counterpart to Braddon and Cooper's polyneuritic pigeons by having developed its symptoms on a diet of raw milk, modified, however, by dilution with water to one half and by the addition of enormous amounts of carbohydrates in the form of Mellin's food. The experience of other authors regarding the inefficiency of cod liver therapy and calcium therapy in scurvy is corroborated by absolutely negative therapeutic results having been obtained in a case of infantile scurvy on the administration of tricalcium phosphate and cod liver oil, indicating that a deficiency of calcium in the diet or in the body plays no primary rôle in the development of scurvy. A report is made of a distinct but temporary improvement in the clinical picture of two cases of infantile scurvy on the administration of large doses of sodium citrate. This observation suggests the possibility of the existence in the development of the clinical picture of infantile scurvy of a modus operandi similar to such as has been shown to exist in cell permeability and irritability by the researches of Jacques Loeb.

American Journal of Roentgenology, New York

February, 1918, 5, No. 2

8 Localization of Foreign Bodies. D. R. Bowen, Philadelphia.—p. 59.
9 War Roentgenologist in Home Territory. C. B. Hollings, Fort Leavenworth, Kan.—p. 75.
10 Roentgen Diagnosis of Bone Lesions. H. M. Stewart, Johnstown, Pa.—p. 77.
11 Roentgen Pleuritis. L. Bryan, San Francisco.—p. 87.
12 Roentgen Diagnosis of Traumatic Lesions of Lower Back. E. L. Davis, Springfield, Mass.—p. 89.
13 Some Roentgenologic Observations on Diagnosis of Tumors of Jaw. J. W. Pierson, Baltimore.—p. 91.
14 Case of Myxoma of Femur. A. Cotton and S. McCleary, Baltimore.—p. 95.

Annals of Surgery, Philadelphia

February, 1918, 67, No. 2

15 *Study of Anteoperative and Postoperative Blood Counts in Noninfective Surgical Conditions. F. L. Meleney, New York.—p. 129.
16 *Electric Burn Causing Necrosis of Skull. D. Lewis, Chicago.—p. 149.
17 Deep Palmar Hand Infections. H. L. Beye, Iowa City, Iowa.—p. 152.
18 *Bone Transplantation in Surgical Treatment of Paralytic Feet. J. E. Fuld, New York.—p. 163.
19 Tuberculosis of Spine; Report of Case. J. A. Honeij, New Haven, Conn.—p. 165.
20 General Principles of Treatment of Wounds of Knee Joint from Projectiles in Warfare. C. G. Cumston, Geneva, Switzerland.—p. 170.
21 Apparatus for Treatment of Compound Fractures of Forearm. H. T. Buckner, Seattle.—p. 179.

22 *New Incision for Exposure of Lower Abdomen and Pelvis. J. W. Churchman, New Haven, Conn.—p. 180.
23 Abdominal Wound Technic. J. O'Conor, Buenos Aires.—p. 183.
24 Resection of Large Bowel at Rectosigmoidal Junction; Report of Cases. S. Stillman, San Francisco.—p. 189.
25 Left Paraduodenal Hernia; Report of Case. A. U. Desjardins, Rochester, Minn.—p. 195.
26 *Distribution of Fat in Appendix; Its Relation to Inflammation. G. M. Smith, Waterbury, Conn.—p. 202.
27 Spontaneous Panhysterectomy After Abdominal Contusion. L. F. Fallon, North New Foundland.—p. 208.
28 Intestinal Obstruction; Experimental Study. B. Brooks, H. W. Schumacher and J. E. Wattenberg, St. Louis.—p. 210.
29 *Etiologic Relationship of Benign Ulcer to Carcinoma of Stomach. A. O. Wilensky and W. Thalhimer, New York.—p. 215.
30 Improved Military Ambulance. G. W. Hawley, Bridgeport, Conn. —p. 226.

15. **Blood Counts in Noninfective Conditions.**—Fifty-one cases were studied by Meleney. These cases were chosen at random, the only cases not accepted in the series being those in which an acute infection was present before operation or a marked infection expected after it. A daily white cell count was made. In thirty-nine a daily differential count was made. In twenty-six the red cells were counted anteoperative and postoperative, and on alternate days thereafter. In every single case the white count rose six hours after operation. Nine cases were later set aside because of the presence of slight infection. Meleney says that the postoperative leukocytosis in noninfected cases is due almost entirely to the outpouring of polymorphonuclear cells. There is a trivial rise in red cells after operation, but in the subsequent ten days this is followed by a progressive anemia with an average loss of about one-half million cells per c.mm. The white cell count may be expected to fall rapidly in clean cases and reach normal on the fourth day. In infected or contaminated cases it will fall much more slowly. Infection and contamination have nothing to do with the initial rise, but on the second or third day after operation they will tend to keep the count high. Other things being equal, the count will be higher in those cases in which there are severe trauma to the tissues, many sutures and ligatures used, considerable loss of blood and long anesthesia, especially with ether. Normal individuals will produce a higher leukocytosis than abnormal types.

16. **Electric Burn Causing Necrosis of Skull.**—Lewis' patient recovered from a very severe shock, having come in contract with a live wire carrying an alternating current of 13,200 volts with an amperage of 150. He sustained an injury to the skull which corresponds to a certain definite type of which thirteen have been reported. Some eight weeks after the accident a double cataract developed rather rapidly.

18. **Bone Transplantation in Treatment of Paralytic Feet.**—The object of this operation is to secure bony ankylosis and so assure stability and prevent lateral deformity of a flail ankle, fixing it in a position of equilibrium midway between flexion and extension. This is done by Fuld by inserting a bone graft which passes through both malleoli and the body of the astragalus.

22. **Incision to Expose Lower Abdomen and Pelvis.**—The skin incision, described by Churchman, begins at the symphysis pubis, runs in the midline upward for about 2 inches, then diagonally upward and outward toward the anterior superior spine. The fascial incision repeats the direction of the skin incision, dividing the rectus sheath longitudinally, then crossing obliquely the anterior sheath and dividing the fascia of m. obliquus externus in the direction of its fibers and as high toward the anterior superior spine as desired.

26. **Fat in Appendix and Inflammation.**—Smith's work is based on a study of 217 appendices. He says that chronic inflammation of the appendix may be associated with or without an increase of visible fat. In about 14 per cent. of appendices examined which were chronically inflamed fat was very much increased and affected occasionally the muscular coat as well as the submucosa. Smith concludes that abnormal accumulation of fat in the appendix is induced by inflammation, aided probably by impairment of circulation in the wall of the appendix.

29. **Benign Ulcer and Carcinoma of Stomach.**—Forty-eight ulcerated lesions of the stomach comprise the material studied by Wilensky and Thalhimer. This includes 39 chronic ulcers, 7 ulcer-like carcinomatous lesions, 1 ulcer with regional carcinomatous lymphnodes, and 1 mixed lesion (resembling an ulcer but with carcinoma at many places on its periphery). This summary does not include 5 gastrojejunal ulcers and 2 healed ulcers which were also investigated. This investigation has not furnished absolute proof that carcinoma of the stomach can arise in a preexisting ulcer. In one specimen out of the 48 examined there was present a carcinoma arising in an ulcer. The majority of ulcerated gastric lesions, however, are either simple chronic ulcers or definite carcinomas. Any etiologic relationship of gastric ulcer to gastric carcinoma cannot be traced in these specimens. Ulcerated gastric lesions which appear benign grossly were proved by the microscope to be malignant in 18.7 per cent. of the cases studied. It is lesions of this sort which the authors claim have given rise to considerable confusion in the past. It is impossible to state whether they represent an ulcerating carcinoma or an ulcer which has undergone malignant transformation.

Florida Medical Association Journal, Jacksonville

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31 Florida's Care for Insane. W. M. Bevis, Chattahoochee.—p. 223.
32 Duties of Board of Health. J. H. Coffee, Fort Meade.—p. 226.
33 Erythema Scarlatiniforme. G. H. Edwards, Orlando.—p. 228.
34 Oral Infections and Their Relations to Systemic Disorders. W. H. Coker, Pensacola.—p. 230.
35 Conductive Anesthesia or Nerve Blocking. B. V. Dannheisser, Pensacola.—p. 231.

Illinois Medical Journal, Chicago

March, 1918, 33, No. 3

36 Personal Hygiene for Troops in Field. M. L. Blatt, Chicago. —p. 129.
37 Suggestions for Prevention and Control of Venereal Diseases in Army. A. E. Mowry, Chicago.—p. 134.
38 Importance of Early and Efficient Doses of Antitoxin in Diphtheria. E. K. Armstrong, Chicago.—p. 139.
39 Early Diagnosis of Carcinoma of Stomach. A. Heinen, Chicago. p. 144.
40 Much Neglected Vena Montanum. F. Kreissl, Chicago.—p. 147.
41 Relation of Syphilis to Cardiovascular Disease. J. G. Carr, Chicago.—p. 149.
42 Special Disorders of Heart from Goiter. E. P. Sloan, Bloomington.—p. 152.
43 Oblique Inguinal Hernia. A. M. Harvey, Chicago.—p. 154.
44 Iridotasis in Simple or Chronic Glaucoma. F. Allport, Chicago. —p. 155.
45 Roentgenograms of Injected Arterial System. J. H. Carpenter, Chicago.—p. 156.
46 Malignant Papilloma of Bladder Complicating Enlarged Prostate and Stone. G. F. Lydston, Chicago.—p. 160.
47 Psychology as Factor in Surgery. G. D. J. Griffin, Chicago.—p. 161.
48 Roentgen Diagnosis of Gastric Cancer. A. Hartung, Chicago.—p. 163.
49 Anal Fissure; Its Radical Cure Under Local Anesthesia. C. J. Drueck, Chicago.—p. 167.
50 Operative Treatment of Tuberculosis of Small Bones. C. M. Jacobs, Chicago.—p. 169.
51 Three Cases of Appendicitis Complicated by Pregnancy. L. P. Dawes, Juneau, Alaska.—p. 171.

Journal of Biological Chemistry, Baltimore

February, 1918, 33, No. 2

52 New Constituents of Milk. III. A New Protein, Soluble in Alcohol. T. B. Osborne and A. J. Wakeman, New Haven, Conn. —p. 243.
53 Influence of Injected Guanidin Hydrochlorid on Blood Sugar Content. C. K. Watanabe, New Haven, Conn.—p. 253.
54 Mathematical Formulas and Acid Excretion. G. D. Barnett, San Francisco.—p. 267.
55 Studies of Acidosis. D. D. Van Slyke, New York.—p. 271.
56 Effects of Acids and Salts on Precipitation of Gelatin by Alcohol. W. O. Fenn, Cambridge.—p. 279.
57 *Feeding Experiments with Peanuts. A. L. Daniels and R. Loughlin, Madison, Wis.—p. 295.
58 *Biologic Analysis of Pellagra Producing Diets. E. V. McCollum and N. Simmonds, Baltimore.—p. 303.
59 Thyroid Hyperplasia and Relation of Iodin to Hairless Pig Malady. E. B. Hart and H. Steenbock, Madison, Wis.—p. 313.
60 Estimation of Amino-Acid Nitrogen in Blood by a Heat-Kaolin Method. S. Okada, Tokyo.—p. 325.

61 *Respiratory Regulation of Carbon Dioxid Capacity of Blood. High Levels of Carbon Dioxid and Alkali. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 333.
62 *Id. Low Levels of Carbon Dioxid and Alkali Induced by Ether. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 345.
63 *Id. Effects of Excessive Pulmonary Ventilation. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 355.
64 *Id. Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity and Shock. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 365.

57. **Peanut as Food.**—The experiments made by Daniels and Loughlin prompt the suggestion that the peanut, when rightly supplemented, will form a staple article of the human dietary. Like the soy bean, it needs only to have added suitable inorganic material and the fat soluble food accessory to make it a complete food.

58. **Pellagra Producing Diets.**—Even with food mixtures derived from two to five seeds McCollum and Simmonds have not found it possible to induce any growth in young rats when the animals were given distilled water to drink, and were therefore, afforded no inorganic salt supply other than what was contained in the seeds. The elements, sodium, chlorin and calcium, are the only ones which must be added in order to make the seeds complete from the inorganic side. Iodin was given in the drinking water once each week. Millet seed and flaxseed are both distinctly better as sources of the fat soluble A than are the cereal grains, wheat, maize and oats. Mixtures of seeds containing one of these may, when properly supplemented with calcium, sodium and chlorin support animals in apparently good health, and without the appearance of xerophthalmia. Emphasis is laid on the close similarity of seeds from the dietary standpoint and the danger of deriving the diet almost exclusively from this source.

61. **High Levels of Carbon Dioxid and Alkali.**—Experiments are reported by Henderson and Haggard in which a high level of carbon dioxid and alkali, or hypercapnia, was induced. Whenever respiration is depressed by means of morphin and the alveolar carbon dioxid is raised, or whenever by the administration of carbon dioxid in the air breathed the carbon dioxid content of the blood is forced up, the carbon dioxid capacity (alkaline reserve) of the blood also rises. This rise is probably due to a compensatory passage of alkali from the tissues into the blood. Through this mechanism respiration exerts a powerful influence on the alkaline reserve of the blood.

62. **Low Levels of Carbon Dioxid and Alkali Induced by Ether.**—Etherization so profound as to depress respiration causes a rise of the carbon dioxid capacity. Light etherization such as is otherwise most effective in lowering the carbon dioxid capacity, and most harmful to the subject, loses this influence when administered with sufficient carbon dioxid to maintain the alveolar carbon dioxid at a normal level. From these facts it is clear that under ether the carbon dioxid capacity of the blood (alkaline reserve) follows and is controlled by the carbon dioxid content, and that the carbon dioxid content is in turn dependent on the alveolar carbon dioxid, which is determined by the breathing. The authors are of the opinion that these results afford final proof of the essential correctness of their views on this topic.

63. **Effects of Excessive Pulmonary Ventilation.**—Excessive pulmonary ventilation by means of artificial respiration induces not only a lowering of the carbon dioxid content but also the carbon dioxid capacity of the blood. Arterial pressure also falls and death from circulatory failure may follow. If the artificial respiration, instead of being made with fresh air, is carried on by continual reinjection mainly of expired air, so that the carbon dioxid content of the blood is not reduced, the carbon dioxid capacity and arterial pressure do not fall and the other ill effects also fail to appear.

64. **Sequence of Trauma, Excessive Breathing, Reduced Carbon Dioxid Capacity and Shock.**—These experiments show that apart from overventilation of the lungs, trauma does not cause a lowering of the carbon dioxid capacity (alkaline reserve) of the blood, even when by general traumatization and cooling of the abdominal viscera and consequent stagnation of the blood in the injured parts, failure of the circulation and death are induced. If, on the other hand, no measures are taken to prevent excessive pulmonary ventilation, the overbreathing induced even by localized manipulation of the stomach, while the rest of the viscera are protected, causes lowering of the carbon dioxid content and carbon dioxid capacity of the blood, and also of arterial pressure. If the lowering of the carbon dioxid capacity is pushed beyond the apparently critical level, between 33 and 36 volumes per cent. the disturbance of the vital equilibrium results fatally. The same duration and degree of localized manipulation administered while the subject is inhaling 6 or 7 per cent. of carbon dioxid does not cause any marked lowering of the carbon dioxid capacity, arterial pressure, or general vitality. Below the critical level for the carbon dioxid capacity, treatment by the administration of 7 to 10 per cent. carbon dioxid in the air breathed does not cause restoration of carbon dioxid capacity or arterial pressure. These results are in general harmony with the conception of acapnia as a factor in shock.

Journal of Cutaneous Diseases, Chicago

March, 1918, **36**, No. 3

65 Localized Areas of Atrophy of Fat Cells in Derma and Subcutaneous Tissue; Case Report. J. Sundall, Lawrence, Kan.—p. 145.
66 Painful Nodular Growth of Ear. O. H. Foerster, Milwaukee, Wis. p. 154.
67 Rhus Dermatitis. I. Toyama, Sendai, Japan.—p. 157.
68 Case of Schamberg's Progressive Pigmentary Dermatosis. L. B. Kingery, Ann Arbor, Mich.—p. 166.
69 *Infection in Cutaneous Disorders. H. Mackay, Winnipeg, Man. —p. 173.

69. **Infection in Cutaneous Disorders.**—Mackay says that in a preponderating number of cases of inflammatory affections of the skin, diligent search will reveal a focus of infection that may reasonably be assumed to stand in etiologic relationship to the disease. Vaccines are of distinct service in combating these maladies in selected cases. The removal of the focus, together with the exhibition of an autogenous vaccine, has almost invariably given a measure of relief to these sufferers, and in many cases have brought about a symptomatic cure. Relapses will usually supervene unless the focus is eradicated.

Journal of Infectious Diseases, Chicago

March, 1918, **22**, No. 3

70 *Incidence of Intestinal Spirochetes in Philippine Islands. B. C. Crowell and F. G. Haughwout, Manila, P. I.—p. 189.
71 Necessity of Carbon Dioxid for Growth of B. Tuberculosis. W. B. Wherry and D. M. Ervin, Cleveland.—p. 194.
72 *Bacteriology of Chorea. W. J. Quigley, Chicago.—p. 198.
73 Use of Larger Quantities of Blood Serum in Wassermann Reaction. E. H. Ruediger, Bismarck, N. D.—p. 205.
74 *Treatment of Scarlet Fever with Immune Human Serum. G. H. Weaver, Chicago.—p. 211.
75 *Prophylaxis of Lobar Pneumonia. J. A. Kolmer and E. Steinfeld, Philadelphia.—p. 220.
76 Complement Fixation of Streptococci. K. Howell, Chicago.—p. 230.
77 New Microscopic Method of Counting Bacteria Adaptable to All Grades of Raw and Pasteurized Milk. P. W. Allen, Urbana. —p. 245.
78 Differentiation of Paratyphoid Enteritidis Group. III. Uncommonness of B. Suipestifer in Intestines of Normal Swine. E. O. Jordon, Chicago.—p. 252.
79 *Studies of Antipoliomyelitic Serum: Its Protective and Curative Properties in Experimental Poliomyelitis of Monkeys. J. W. Nuzum and R. G. Willy, Chicago.—p. 258.
80 Effect of High Pressures on Bacteria. W. P. Larson, T. B. Hartzell and H. S. Diehl, Minneapolis.—p. 271.

70. **Intestinal Spirochetes in Phillipines.**—Fifty stools were examined by Crowell and Haughwout, representing forty-six separate hospital cases. Of these cases, thirty-five were positive for spirochetes. There were seventeen cases which showed a concomitant infection with endameba, and scattered infections with *Trichomonas intestinalis* and the more common helminths. The patients from whom these stools were obtained were undergoing treatment for various ailments. Of the thirty-five which were positive for spirochetes, ten patients were receiving treatment for endamebic dysentery.

72. **Bacteriology of Chorea.**—Cultures from the tonsils, and from the blood and cerebrospinal fluid of acute, subacute

and chronic cases of chorea were made by Quigley. Blood cultures were made in twenty-one patients, ten of whom gave positive results. Nine gave small cocci, slightly elongated and arranged in pairs, short chains, and a few groups, in aerobic cultures. The other positive blood culture gave a gram-positive short diphtheroid organism. The cerebrospinal fluid of twenty-one patients has been cultured, with thirteen positive results. One was not subcultured. Eight of the organisms isolated resembled very closely the organisms found in the blood. Throat cultures were made in fifteen patients, and twenty-nine cultures were isolated and studied. Ten were hemolytic streptococci of variable size, occurring in long and short chains. Thirteen were green producing cocci, growing in pairs and short chains. Six were organisms which grew on blood agar as pin-point colorless nonhemolytic colonies, and resembled the organisms recovered from the blood in their morphologic and cultural characteristics, with the exception of their fermentative reactions. Eleven patients gave histories of acute tonsillitis, two of rheumatism, and one of endocarditis. Eight gave no history of rheumatism, endocarditis, or tonsillitis. None gave any evidence of syphilis.

74. **Scarlet Fever Treated with Immune Human Serum.**—During the past winter and spring an unusual proportion of severe cases of scarlet fever has come under treatment in the Durand Hospital, and the most severe were selected for treatment with convalescent serum. The blood was drawn from the twentieth to the twenty-eighth day, only such convalescents being selected as were free from all suspicions of tuberculosis, who had not been septic patients, and who gave a negative Wassermann reaction. The serums from several patients were mixed, tested for sterility, and stored, until used, in the refrigerator in portions suitable for single doses. The serum was injected intramuscularly in doses of 25 to 90 c.c., 60 c.c. being the usual dose. Commonly a single dose was given, a few times a second dose was administered if the initial one did not produce the desired effect. The injections were made into the muscles on the outer side of the thigh, usually dividing the dose between the two sides. No local or general disturbances followed the injections. Nineteen cases of scarlet fever were treated in this manner and in a few additional cases convalescent serum was combined with antidiphtheria serum in cases of scarlet fever complicated by diphtheria. The effects of injections of convalescent serum in cases of scarlet fever as observed by Weaver correspond to those noted by others who have used it. Quite constantly a fall of temperature began two to four hours after the serum was injected and continued gradually until its limit was reached in twelve to twenty-four hours. In the purely toxic cases the temperature fell to nearly normal and showed little tendency to rise again. In cases with septic complications the initial fall of temperature also occurred and was associated with general improvement, but the fever rose again and ran a course such as occurs in septic cases. More striking than the fall in temperature, was the improvement in the general condition of the patient. This was most pronounced in the purely toxic cases, but also very prominent in the septic ones. Delirium subsided, the pulse became slower and improved in quality, cyanosis disappeared, and in twelve to twenty-four hours patients who had seemed almost hopelessly sick were apparently on the road to certain recovery. Septic cases coming under treatment late do not appear to be improved by the serum.

75. **Prophylaxis of Lobar Pneumonia.**—As recent investigations in the epidemiology of lobar pneumonia have indicated that the disease is frequently acquired by transmission of specific virulent types of pneumococci from a recovered person who still harbors in the mouth secretions the organisms responsible for the disease, or from a healthy carrier of pathogenic pneumococci, it is suggested by Kolmer and Steinfield that the systematic use by the patient and those in close contact with the disease of a mouth wash of 1:10,000 solution of ethylhydrocuprein hydrochlorid or quinin bisulphate in 1:10 liquor thymolis, may serve to destroy or inhibit the multiplication of the disease producing pneumococci and thereby aid in the prophylaxis of lobar pneumonia.

79. **Antipoliomyelitic Serum.**—Nuzum and Willy have produced a highly potent immune serum in the horse by repeated intravenous injections of aerobic cultures of the poliomyelitic coccus. Such a serum contains agglutinins, complement fixing bodies and especially opsonin in high titer. Monkeys can be immunized against several fatal doses of virulent monkey-adapted virus by repeated intravenous and intracerebral injections of the poliomyelitic coccus. The serum of the horse immunized with strains of the poliomyelitic coccus obtained from human and monkey sources possesses protective and curative properties against the virus in experimental poliomyelitis of monkeys.

Medical Record, New York

March 9, 1918, **93**, No. 10

81 Plea for Better Team Work Between Internist and Surgeon in Treatment of Surgical Affections of Biliary Tract. D. N. Eisendrath, Chicago.—p. 439.
82 Problem of Syphilis. F. M. Harrison.—p. 402.
83 Common Deafness; Its More Accurate Handling. C. Gluck, New York.—p. 410.
84 National Bureau for War Cripples of France. D. C. McMurtrie, New York.—p. 415.
85 Need for an Intensive Study of Mortality Associated with Childbearing. G. W. Kosmak, New York.—p. 417.
86 Standards for Swimming Pool Legislation. W. A. Manheimer, New York.—p. 418.

New Orleans Medical and Surgical Journal

March, 1918, **70**, No. 9

87 Dengue Fever. C. C. McCulloch, Washington, D. C.—p. 694.
88 Disposal of Human Bowel Excreta in Tropics. G. P. Paul.—p. 707.
89 Pituitary Extract; Its Value in Postoperative Treatment. N. Davis and R. Owens, Dalhart, Texas.—p. 712.
90 Diseases of Eyes in Cuba, Tropical Country. J. S. Fernandez, Havana, Cuba.—p. 717.
91 Frontal Sinus Operation (Lothrop) Performed Under Local Anesthesia. M. P. Boehinger, New Orleans.—p. 721.
92 Résumé of Health Conditions of Modern Department Store. E. Bloch, New Orleans.—p. 724.
93 Case of Primary Infection of Scrotum by Gonococcus. P. J. Kahle, New Orleans.—p. 733.

New York Medical Journal

March 9, 1918, **107**, No. 10

94 Shoes, Physiologic and Therapeutic. D. D. Ashley, New York.—p. 433.
95 Reversionary Pseudobile Canaliculi Formation in Cirrhotic Liver by Vulpine Phalanger. F. D. Weidman, Philadelphia.—p. 438.
96 Trichinosis. J. G. Cumming, San Francisco.—p. 441.
97 Common Sense in Prevention and Correction of Some Paralytic Deformities. S. A. Jahss, New York.—p. 444.
98 Cases of Brain Abscess Caused by Chronic Suppurative Otitis. W. C. Braislin, New York.—p. 446.
99 *Two-Stage Prostatectomy. E. A. Graham, Chicago.—p. 447.
100 Eczema Due to Deficient Thyroid Secretion. M. H. Edelman, New York.—p. 450.
101 Modified Method of Bone Graft. J. A. Miller, New York.—p. 452.

99. **Two Stage Prostatectomy.**—Graham reports twenty consecutive prostatectomies without a fatality, performed by the two stage suprapubic method, many of which were on patients who would ordinarily be considered as bad surgical risks, bear witness to the relative safety of this method. He says that when properly controlled by functional and other tests, it minimizes much of the risk. A preliminary cystostomy has the advantages of providing the best possible drainage, thereby affording relief of back pressure on the kidneys and an opportunity greatly to improve an existing cystitis before performing the more radical operation of enucleation of the prostate.

Ohio State Medical Journal, Columbus

March, 1918, **14**, No. 3

102 Periosteal Sarcoma of Clavicle; Report of Case. V. A. Dodd, Columbus.—p. 141.
103 Empyema. J. E. Pirrung, Cincinnati.—p. 144.
104 Our Duty to Feebleminded. E. J. Emerick, Columbus.—p. 147.
105 Treatment of Septic Arthritis. R. B. Cofield, Cincinnati.—p. 149.
106 Professional and Lay Attitude with Reference to Medical and Surgical Fees. R. R. Kahle, Columbus.—p. 151.

Rhode Island Medical Journal, Providence

March, 1918, **2**, No. 3

107 Treatment of Poliomyelitis. F. E. Peckham, Providence.—p. 35.
108 Vaccine Treatment in Fifteen Cases of Typhoid at Rhode Island Hospital. H. A. Cooke, Providence.—p. 38.
109 Current Public Health Legislation. J. G. O'Meara, Providence. —p. 41.

Surgery, Gynecology and Obstetrics, Chicago

March, 1918, **26**, No. 3

110 Treatment of Fractures of Extremities by Means of Suspension and Traction. J. A. Blake and K. Bulkley.—p. 245.
111 Sutureless Skin Sliding Method for Radical Treatment of Lung Abscess and Chronic Osteomyelitis. E. G. Beck, Chicago.—p. 259.
112 Gastric Function Following Gastro-Enterostomy; Analysis of Two Hundred and Seventy-Three Cases. F. Smithies, Chicago. —p. 275.
113 Cholesterol Content of Blood in Gallstone Disease. S. P. Reimann and J. A. H. Magoun, Philadelphia.—p. 282.
114 Angulation at Sigmoid; Report of Cases. H. B. Delatour, Brooklyn.—p. 285.
115 Malignant Neoplasm of Thyroid with Metastases in Intestine and in Bone. J. F. Binnie, Kansas City.—p. 288.
116 Cancer in Surgical Clinic of San Juan De Dios Hospital; Report of Cases. J. B. M. y Florez, Medellin, Columbia, S. A.—p. 291.
117 Urinary Extravasation. J. A. Wolfer, Chicago.—p. 296.
118 Bile Peritonitis Without Evident Perforation of Biliary Tract. J. J. Buchanan, Pittsburgh.—p. 303.
119 *Clinical Study of Blood Pressure and Hemoglobin in Postoperative Shock, Postoperative Hemorrhage and Postoperative Cardiac Dilatation. J. O. Polak and O. H. Heffter, Brooklyn.—p. 312.
120 Clinical and Experimental Studies on Congenital Pyloric Stenosis. R. Lewisohn, New York.—p. 318.
121 *Fascia Transplantation into Lateral Defects of Major Arteries. H. Neuhof, New York.—p. 324.
122 Care of Puerperal Woman; Polypoid Decidual Endometritis. A. J. Nyulasy, Perth, Australia.—p. 331.
123 Use of Bull's Serum in Three Cases of Infection with B. Aerogenes Capsulatus Welchii. A. McGlannan, Baltimore.—p. 336.
124 Universal Fracture Frame Combining Suspension with Traction of Lower or Upper Extremity and Fluoroscopic Control. G. W. Hawley, Bridgeport, Conn.—p. 339.
125 Case of Minor Displacement of Lumbar Vertebrae; Reposition. Cure. E. F. Cyriax, London.—p. 346.
126 *New Method of Treating Filiform Strictures of Urethra. L. Buerger, New York.—p. 347.
127 Case of Hemolytic Splenomegaly Cured by Splenectomy. L. Urrutia, San Sebastian, Spain.—p. 350.
128 Ethyl Chlorid as General Anesthetic of Choice in Operation of Short Duration. F. Hagler, St. Louis, and R. L. Bowen, Chicago.—p. 352.
129 French Service de Santé in Field. S. W. Kelley, Cleveland. —p. 354.

119. Abstracted in THE JOURNAL, July 21, 1917, p. 237.

121. **Fascia Transplantation in Defects of Major Arteries.**—Neuhof demonstrates that fascia is as serviceable as vessel wall or peritoneum-muscle for the replacement of even large lateral defects of the major arteries and, at the same time, offers greater possibilities for clinical application in the appropriate problems encountered in human surgery.

126. **Treatment of Filiform Strictures of Urethra.**—Buerger exposes the orifice of the stricture through an endoscopic tube, and inserts the filiform under the guidance of the eye. He has devised special instruments for this work.

West Virginia Medical Journal, Huntington

March, 1918, **12**, No. 9

130 Cellular Determination of Sex. P. J. McElrath, Bramwell.—p. 321.
131 Some Problems of Cardiovascular Disease. E. E. Cornwell, Brooklyn.—p. 328.
132 Recent Advances in Medicine as Related to Diseases of Heart. J. W. Preston, Roanoke, Va.—p. 332.
133 Pyelitis. S. L. Cherry, Clarksburg.—p. 338.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 8, 1917, **2**, No. 2971

1 *War Nephritis. J. S. Dunn and J. W. McNee.—p. 745.
2 *Hemagglutinin Reaction as Test of Toxicity of Various Antiseptic Reagents. C. J. Bond.—p. 751.
3 *War Nephritis. T. Oliver.—p. 755.
4 Experiments on Solubility of Plain Lead and Antimonial Lead. T. M. Clague.—p. 757.
5 Painless Childbirth. W. A. Potts.—p. 758.
6 Id. M. Vivian.—p. 760.

Feb. 2, 1918, **1**, No. 2979

7 *Etiology of Diabetes Mellitus. R. T. Williamson.—p. 139.
8 Effect of Intermittent Stretching on Muscles and Nerves After Nerve Severance. J. N. Langley.—p. 141.
9 *Helpful Diagnostic Sign in Ruptured Digestive Ulcers. R. J. Willan.—p. 142.
10 Primary and Secondary Impetigo in Soldiers. H. MacCormac. —p. 143.
11 War Surgery of Chest. A. L. Lockwood and J. A. Nixon.—p. 145.
12 *Treatment of Infected Hemothorax. J. F. Dobson.—p. 148.
13 *Gunshot Injuries of Elbow Joint; Treatment by Early Excision. W. M. Shepherd.—p. 149.
14 Two Cases of Abscess of Testis Due to Bacillus Coli. W. G. Nash. —p. 149.

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15 Pyrogenic Therapy. A. G. Auld.—p. 195.
16 *Treatment of Wounds of Chest; with Special Reference to Infected Hemothorax. W. Hutchinson.—p. 196.
17 *Modern Treatment of Empyema by Antiseptics. R. A. Stoney. —p. 198.
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20 Home Disinfection in Pulmonary Tuberculosis. E. L. Dove— p. 204.

1. **War Nephritis.**—Fifty-one cases are analyzed by Dunn and McNee. Dyspnea appears to be an unusually prominent symptom. It is, in the great majority of cases, the most outstanding complaint, and is almost always present on admission of the patient to the hospital. Very often it is the first and earliest symptom to appear, and in only two cases was there no history or evidence of breathlessness. Breathlessness was present in thirty-four cases; swelling of the face or legs in seven cases; pains in the head, epigastrium, or back in six cases; sore throat in three cases and cough and hoarseness in one case. In association with the dyspnea, cough is frequently present, and in some instances this is accompanied by tenacious expectoration. Even though cough is absent and always in its presence, auscultation of the chest reveals the presence of râles and rhonchi; the physical signs, however, are often slight in comparison with the degree of breathlessness. In only one case was considerable effusion into the chest discovered. Hoarseness (from laryngitis) was the initial complaint of one man, and sore throat of three others. In the latter cases, apart from some faucial redness, nothing could be seen amiss. Edema, while generally present, is frequently confined to the face alone. In many cases, however, it is also present in the legs, and a few examples of general anasarca have been met with. Definite ascites was seen only once. Fever was present in six cases only, the highest being 103.4 F. Uremia ensued in four cases. The urine, when the patient is first seen, generally contains a large amount of albumin. Casts are always present in the centrifugalized sediment, but are often far from numerous. Bacteriologic examination was made of thirty-five catheter specimens; fourteen were sterile; streptococci were found in fifteen, other bacteria in six. Forty acute cases were examined by blood culture. All the cultures remained sterile, even after prolonged incubation.

The authors suggest that the high albuminuria, often without obvious blood, the absence of oliguria, the frequent rapid decrease in the amount of albumin, the predominant dyspnea, and the general healthy appearance of the patient while obvious signs of nephritis are present, give collectively a rather characteristic picture differing from that of the average case of acute nephritis at home. The rapidity with which the initial symptoms of the nephritis may subside, after admission of patients to the hospital, is remarkable. It is frequently so striking as to suggest that the mere transfer of the patient has brought about discontinuance of the circumstances which caused the disease. From a consideration of the pathologic conditions no direct conclusion has been drawn regarding etiology, but some important facts have been ascertained. The visible alteration in the kidneys which is most constant and distinctive is limited to the capillary blood vessels of the glomeruli. The absence of definitely inflammatory reaction in these structures, and the uniformity and selective distribution of the lesions, suggest that they are due to the presence, in the blood stream, or a mildly irritant agent with a special effect on the small blood vessels. The edema

of subcutaneous tissue, and the vascular lesions in the lungs and the brain are probably due to the same factor. The minute cerebral hemorrhages which are occasionally present in nephritis are of exactly similar character to those which frequently occur after poisoning by phosgene. In fatal cases of war nephritis the pulmonary air passages are frequently the seat of lesions which bear some resemblance to those produced by irritant gases.

2. **Hemagglutinin Reaction.**—Bond claims that by the addition of a hemagglutinin to a liquor puris or a serum, one can induce the leukocytes to phagocytose native red cells—that is, red cells from the same blood—when incubated together. Isophagocytosis of red cells by pus cells may also be observed in pus from wounds in patients whose blood serum is hemagglutinative. Pus cells from "whole" pus (if it contains hemagglutinins of the right kind) will ingest washed human red cells more freely than washed pus cells from the same pus will digest them, although the washing in saline actually increases the activity of the cells by removing the bacterial toxins and tryptic content of the liquor puris. The difference in the two cases depends on the fact that hemagglutinins are present in the "whole" pus and absent in the washed cells. Moreover, no ingestion of red cells occurs if the "whole" pus is nonagglutinative. Putting all these facts together, Bond concludes that, so far as the phagocytosis of red cells by leukocytes is concerned, hemagglutinins also act as opsonins and prepare the red cells for ingestion.

3. **War Nephritis.**—Oliver suggests that in all cases in which pieces of shrapnel are retained in the body it would be well to have the patient's urine examined for lead. In some cases seen by him there seemed to be a distinct connection between albuminuria and retained shrapnel.

7. **Etiology of Diabetes Mellitus.**—The etiology in 300 cases of diabetes was carefully investigated by Williamson with the following results: History of prolonged great excess of sugar, sweet food, or sweet drinks (alone or combined with other predisposing causes) in 93 (= 31 per cent.). History of prolonged and intense mental anxiety, worry, overstrain, or sudden mental shock (alone or combined with other predisposing causes) in 120 (= 40 per cent.). Family history of diabetes (alone or combined) in 76 (= 25 per cent.). No definite predisposing cause in 59 (= 19 per cent.). Williamson considers it desirable for all to cut down sweet foods and drinks, chocolate, jam, sugar and alcohol to a minimum during the war, and especially for those who have a family history of diabetes, and are suffering from great mental strain or shock; they will thereby help the food controller and also diminish the risk of diabetes. Occupation and close attention to work are useful in diminishing the effects of mental worry and shock, and thereby the risk of diabetes, but in certain cases of excessive overwork it is desirable to cut off work not absolutely necessary, if this is possible; sleep is very important. The recent food restriction, as already mentioned, will check for most people any excess of sugar and alcohol, and will thus tend to diminish the risk of diabetes. Those who have been obliged through these restrictions to discontinue excess of alcohol or sugar should, however, not replace these by excess of nonalcoholic drinks containing much sugar, and excess of jam, chocolate and other sweet foods which may be still obtainable.

9. **Helpful Diagnostic Sign in Ruptured Ulcers.**—In cases of ruptured duodenal ulcer Willan has noted the presence of a transverse ring of constriction across the abdomen at the level of the lower margins of the ribs, and extending into the flanks on either side. The constriction does not always disappear with general anesthesia, although it does disappear when the condition has advanced to the stage of general abdominal distention. There is no marked hyperesthesia, and the patient is quite unconscious of any feeling of tightness at the site of the constriction. It is not confined to spare or emaciated persons, and is different altogether from the scaphoid abdomen seen in emaciation, etc. The appearance is as if an invisible rope was constricting the abdomen, dividing it into an upper portion which has a convex aspect centrally, and a normal lower part. Viewed laterally, the region of the rope forms the apex of a vertically situated obtuse angle. The ring of constriction corresponds to that portion of the anterior abdominal wall supplied by the ninth intercostal nerve, and is due to muscular contraction.

12. **Treatment of Infected Hemothorax.**—Dobson has treated cases of infected hemothorax by a method of irrigation through a special cannula which, he says, appears to be of promise. The curved silver cannula has no terminal aperture, and is perforated with twelve small holes. It is employed in the following manner: A sufficient opening is made into the chest by resection of a length of rib, preferably the eighth. Tuffier's spreader is then inserted, the pleural cavity wiped out, and perhaps a foreign body is removed or other complication dealt with. A point on the chest wall toward the upper limit of the cavity is selected where the cannula may most conveniently be introduced. This is usually in the third or fourth space, about or just external to the mammary line; a small incision is made through the skin, and the cannula pushed through the intercostal muscles into the chest. The tip of the cannula should point outward and downward, and the instrument is fixed in position by two sutures to the skin. The original incision is then closely sutured around a tube which may be long enough to reach into a bottle of antiseptic fluid. The tube of a Carrel ampoule is then attached to the cannula, and the cavity irrigated every two hours. A fine spray of fluid is thrown in every direction on to the lung and chest wall. The irrigation causes no distress; as the lung expands the point of the cannula is pressed against the chest wall and causes some pain; it should then be removed. For this reason it is desirable to insert it at some little distance from the anterior and upper limits of the cavity, otherwise it may have to be taken out before the infection is controlled. The infection is quickly controlled, the lung expands well, and the general condition of the patient improves very rapidly.

13. **Gunshot Injuries of Elbow-Joint Treated by Early Excision.**—Observation of fourteen cases has led Shepherd to the conclusion that excision of the elbow-joint in gunshot wounds offers the patient the best chance of combating the infection and of a rapid recovery with a movable joint. If excision can be performed without the removal of the heads of radius and ulna, the results are better and more quickly attained. Where possible the triceps insertion should always be preserved. The earlier the excision is performed the shorter is the illness and more perfect the result.

16. **Treatment of Chest Wounds.**—The method applied by Hutchinson in cases of infected hemothorax is as follows: As soon as a hemothorax is found to be infected the patient is taken to the operating room and nitrous oxid and oxygen administered. A portion of rib, long enough to allow the hand to be passed through the opening, is removed and the blood allowed to flow out. The clot is then removed by the hand, all parts of the cavity explored, and light adhesions broken down. Then by means of large pieces of gauze on dressing forceps the remainder of blood and clot is removed. After this the cavity should be washed out with saline and again mopped out and a running suture inserted in such a way as to include the pleura and intercostal muscles. This suture should be left quite loose, so that a small quantity of some antiseptic can be poured into the pleural cavity. This antiseptic should be spread all over the walls of the cavity by means of a small piece of gauze on long dressing forceps. As soon as this has been done the running suture is drawn tight, thus closing the pleural cavity completely. The muscles and skin are then closed and a dry dressing applied. Forty-eight hours after the operation the chest should be aspirated, thus removing a quantity of serum and air. Three or four aspirations are necessary during the course of convalescence. The antiseptics which Hutchinson has used in these cases include eusol solution, 1 in 2; a suspension of bipp in liquid paraffin in the following proportions: one-half ounce of bipp, 6 ounces of paraffin; flavine solution 1 in 5,000, and normal saline, the amount left in the chest being 3 ounces. The results obtained in twenty-nine cases treated in this manner have led Hutchinson to prefer the bipp treatment. Certain

type of infection lend themselves to this form of treatment better than others, such as *B. aerogenes-capsulatus*.

17. **Treatment of Empyema by Antiseptics.**—Stoney is convinced that most if not all cases of empyema can be cured without resort to such mutilating and dangerous operations as thoracoplasty and pulmonary decortication, because it is not necessary to obliterate the pleural space, but merely to render its walls sterile, and this is possible by frequent washings with hypochlorite solutions. Flushing of the pleural cavity with hypochlorite solution is not dangerous provided there is a free exit for the fluid, as by the use of a double drainage tube. The earlier this treatment is instituted the sooner and more surely will a cure be obtained, as there will be less formation of granulation and scar tissue, and the organisms will not have had time to entrench themselves deeply in the tissues, and will therefore be more exposed to the action of the antiseptic. The drainage should be free, and the opening should not be valvular; if a Carrel tube is used it should be introduced as far as possible into the pleural cavity through a large drainage tube, so that the fluid, starting at the most remote part of the septic space, passes down over its walls and escapes freely between the Carrel tube and the drainage tube. The opening is most sutiably made by removing 1 inch of the eighth rib in the scapular line, as this is the most dependent spot for practically all positions, and there is no fear of its closure by the rising diaphragm.

Journal of Laryngology, Rhinology and Otology, London

February, 1918, **33**, No. 2

21 Fifty Cases of Innocent Laryngeal Growths. A. Wylie; with Pathologic Report. W. Wingrave.—p. 33.
22 Primary Tuberculosis of Faucial Tonsils in Children. A. P. Mitchell.—p. 40.
23 Atresia of Choanæ; Simple Device for Prevention of Reformation of Obstruction After Its Removal. A. J. Brady.—p. 49.
24 Ossiculectomy in Chronic Adhesive Otitis. A. J. Brady.—p. 50.
25 Deafness Due to Placing Candle Grease in External Auditory Meatus. G. E. W. Henderson.—p. 51.

Journal of State Medicine, London

February, 1918, **26**, No. 2.

26 Value and Importance of Physical Exercises from National Standpoint. W. Milligan.—p. 33.
27 Treatment and Training of Cases of Surgical Tuberculosis. H. J. Gauvain.—p. 44.
28 Welfare Work and Public Health. B. S. Rowntree.—p. 51.

Lancet, London

Feb. 16, 1918, **1**, No. 4929

29 Syphilis of Central Nervous System: with Special Reference to Use of Novarsenobillon. H. Carhill.—p. 243.
30 *Wolff's Law of Bone Transformation. A. Keith.—p. 250.
31 Case of Rat Bite Fever. S. R. Douglas, L. Colebrook and A. Fleming.—p. 253.
32 *Preservation of Typhoid and Paratyphoid Bacilli in Stools by Emulsifying in Glycerin. T. H. C. Benians.—p. 255.
33 *Action of Acriflavine and Proflavine. W. P. Morgan.—p. 256.

30. **Wolff's Law of Bone Transformation.**—Keith urges that the orthopedic surgeon should cultivate a close observance of the behavior of osteoblasts. If he understands them fully and treats them rightly, they can prove his most helpful friends; if he ignores them, they can and do prove obstinate. In the first place, as the author has seen from their behavior in grafts, they must be subjected to stresses; stress is as necessary for their health and activity as exercise is for the living body. The mode in which they build and the lines along which they will deposit their building material are determined by the forces which are brought to bear on them. They can, by manipulating such force, be made to build as we will. They can be stimulated to overwork in many ways. By beating the external condyle of the femur with a mallet, the bone cells will build up a rampart which prevents the outward dislocation of the patella. Injury to a bone excites every osteoblast in that bone; diaphyseal growth disks act as buffers in limiting the radiation of a stimulus. Acute inflammation increases their activity and destroys their sensitiveness to pressures. The study of diseased conditions brings out other qualities of osteoblasts. In giants they become stimulated to an extraordinary degree by a certain substance or substances derived from the pituitary body; in certain forms of dwarfs this elixir of growth is withheld. In acromegaly growth is again reawakened under a pituitary derivative—a growth which chiefly affects cartilage covered areas of bone, areas which are constantly subjected to pressure and movement. Paget's disease is quite another disturbance in the life of osteoblasts. They are no longer acutely sensitive to the stresses which fall on the skeleton; they lose their engineering qualities and lay down their materials clumsily. The study of many other conditions, such as achondroplasia, periosteal dystrophy, rickets, mollities ossium, fragilitas ossium, throws sidelights on the complex nature of osteoblasts.

32. **Preservation of Thyroid Bacilli in Stools.**—Benians' experiments support the work of Teague and Clurman, and show that if fecal specimens destined to be examined for the enteric organisms have to submit to delay in transport or for any other reason, it would be well if they were first emulsified in 30 per cent. glycerin; a positive result is then much more likely to be obtained. This is especially true in warm weather and in hot countries.

33. **Action of Acriflavine.**—Morgan found that acriflavine is, as regards both its antiseptic and toxic properties, more potent than proflavine. It has a very marked bactericidal inhibiting action on streptococci and a less marked on staphylococci, but on some other organisms its effect is practically insignificant. Its action is therefore strikingly selective. It has a marked but slow toxic action on the tissue. This toxic action of acriflavine is not so great that it should not make when used in dilute solution (say 1 to 4,000) an efficient application in a dressing for a wound infected with streptococcus or staphylococcus. It should be applied after the wound has been thoroughly cleansed by washing, first with a rapidly acting antiseptic lotion, such as neutral solution of chlorinated soda, and then by physiologic sodium chlorid solution.

Medical Journal of Australia, Sydney

Feb. 2, 1918, **1**, No. 5

34 Military Orthopedics. V. Hurley and H. R. G. Poate.—p. 81.
35 Gunshot Wounds of Knee Joint. F. L. Gill.—p. 84.

Archives des Maladies du Cœur, Paris

January, 1918, **11**, No. 1

36 *Blood Pressure in Typhus. D. Danielopolu and D. Simici.—p. 1.
37 Fragility of Heart in African Troops. A. Mougeot.—p. 12.
38 *Cardiovascular Disturbances in Typhus. J. Heitz.—p. 38.

36. **Blood Pressure in Typhus.**—Danielopolu and Simici recorded the blood pressure systematically in eighty-four typhus patients during the course of the disease and after defervescence. The maximal tension was generally found low, the minimal tension low also, but to a lesser extent. This drop in tension is due less to weakness of the myocardium than to the more or less generalized vasodilation. The latter is accompanied by extreme asthenia and these symptoms keep up and may even increase after defervescence. The asthenia persists for weeks and even months after recovery, and the arterial pressure keeps low. They found profound lesions in the suprarenal capsules, especially in the cases with particularly low pressure and asthenia. In one case of sudden death in typhus the medullary substance was transformed into a hemorrhagic pulpy mass, but some physicians have reported that the suprarenals were apparently sound in their cases that came to necropsy. Another suggestive fact is that injection of epinephrin does not induce the usual reaction. The response is less, the severer the case; there is no reaction to the intradermal tuberculin test in severe typhus, and no abscess after injection of turpentine.

38. **Cardiovascular Symptoms in Typhus.**—Heitz compares some old and recent descriptions of typhus. The fourteenth and fifteenth days seem to be the culminating point of the danger. Obliterating arteritis of the legs was frequent and definite lesions were often left in the myocardium.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 23, 1917, 41, No. 32

39 *Induced Diagnostic Eruption in Measles. H. Godlewski.—p. 1151.
40 *Serotherapy of Spirochete Jaundice. L. Martin and A. Pettit. —p. 1156.
41 Suprarenal Tuberculosis in Young Man. R. M. Martin.—p. 1161.
42 *Cholalemia in Jaundice. M. Garnier and J. Reilly.—p. 1163.
43 Autochthonous Malaria. V. Raymond.—p. 1167.
44 *Acute Gastritis in the Gassed. F. Ramond, A. Petit and P. A. Carrié.—p. 1169.
45 *Paratyphoid B Fever. G. Etienne and J. Mondelange.—p. 1173.
46 Acute Liver-Kidney Intoxication with Azotemia. L. Giroux and M. Rechner.—p. 1175.
47 *The Gonococcus Pus Under Potassium Permanganate. J. Maheu. p. 1178.

39. Induced Diagnostic Eruption in Measles.—Godlewski gives a colored plate of the findings when dry cupping is applied to the chest or back for thirty, forty or fifty seconds. On 200 healthy persons there was left a whitish ring where the cup had rested. When applied to a person during the incubation stage of measles, three days before the eruption appeared, a reddish ring was seen, the skin looking as if it were stippled with red in the form of a circle. If applied forty-eight hours before the eruption, the red circle is much wider and the color deeper; twelve hours before the eruption the red circle is still wider and the color veers more to purple. This induced erythema reaches its height in three and a half minutes and then subsides, lingering sometimes up to ten minutes. This test was applied to 218 persons and the eighteen giving a positive reaction developed a typical measles eruption four or five days afterward. The subjects included children and adults; in each case there was nothing to suggest measles at the time except this ring of induced erythema. The color deepens the closer to the date of the measles eruption. Godlewski relates that ten cases of what seemed to be measles developed in epidemic form in one barrack, but this cupping glass test was negative, and the assumption of measles was disproved by the course of the cases. He has had no opportunity to apply the test thoroughly in scarlet fever, but it was negative in the two cases tested. If time and experience confirm the reliability of this reddish crown induced by the cupping glass as a sign of incipient measles, it will prove useful in camps and institutions to weed out the cases of measles without waiting for the eruption.

40. Antispirochete Serotherapy.—Martin and Pettit cite conflicting testimony as to the value of the serum now being made for spirochetosis icterohemorrhagiae.

42. Influence of the Bile Salts in the Blood on the Course of Spirochete Jaundice.—The data presented by Garnier and Reilly apparently confirm the assumption that the bile salts have a destructive action on the spirochetes. When the bile salts in the blood reach a certain level, then the septicemia stops. The various forms of the disease, the cyclic, the irregular, the transient and recurring and the abortive cases seem to be all conditioned by the variations in the excretion of the bile salts. An emulsion of liver tissue from a guinea-pig that has died from spirochetosis icterohemorrhagiae, loses its virulence when treated with a little human or beef bile or guinea pig bile. After the clinical jaundice had lasted two or three days, inoculation with the blood was always negative. The fever runs up again when only the bile pigment is getting into the blood and the active part of the bile is no longer diverted from its normal route. Definite defervescence occurs when the organism has manufactured enough antibodies to assure immunity. Otherwise the temperature keeps normal while the Hay reaction is positive; fever returns when this reaction veers to negative.

44. Acute Gastritis in the Gassed.—After a period of persisting nausea with vomiting and possibly hematemesis, lasting a few hours or days, there follows an acute gastritis, with pains in stomach and esophagus, and sometimes sensations of intense hunger. Vomiting and pyrosis follow immediately after eating. There may be an acute febrile gastro-enteritis for about two weeks. After this conditions may return to normal but generally the men are left with dyspepsia. They lose their appetite and feel languid and drowsy after eating, with a sense of oppression in the stomach region, and they cannot bear even the weight of the hand on the stomach region at night, but nothing objective can be found to explain these disturbances. Necropsy of the gassed, however, has shown hyperemia of the mucosa of the alimentary canal with hemorrhagic suffusions.

45. Paratyphoid B.—A restaurant waitress ate a can of spoiled salmon and developed an extremely grave choleriform intoxication, evidently from the toxins already in the can. The ninth day symptoms of paratyphoid fever developed. The germs had evidently required eight days for their incubation.

47. Gonococcus Pus under Potassium Permanganate.—Maheu has been keeping microscopic control over the urethral secretions of thirty-four men with gonorrhea who had been given a course of treatment with intramuscular injections of permanganate. In a week the number of gonococci in each islet is considerably smaller although the number of islets keeps about the same. The pus persists abundant but the nuclei of the cells show fragmentation and large macrophages follow directly after the polynuclears. The gonococci at this stage show that they are suffering.

Journal de Chirurgie, Paris

February, 1918, 14, No. 3

48 *Suture of Old Infected War Fractures. M. Guillot and H. Woimant.—p. 217.
49 *Gas Gangrene. E. Job and E. Roux.—p. 233.
50 Hernia of Stomach through Diaphragm. P. Lecène.—p. 247.

48. Suture of Old Infected Fractures.—Guillot and Woimant write to extol the advantages of applying the Carrel method in cases of old bone lesions with fistulas, and also in cases of fractures several days after evacuation. They say that fully 50 per cent. of the men with fracture of the femur still have a fistula a year after the fracture unless they have been amputated. By applying the Carrel method to these old cases we not only heal them up but we avoid the functional disturbances from sclerosis, and we are able to get consolidation when this has not occurred properly. They describe the various steps of the Carrel procedure as applied to these cases, the preliminary disinfection under bacteriologic control, the operation, the sterilization of the focus, and the closure of the wound. When the cavity has to be filled up before suture is possible, they found that a graft of adipose tissue answered the purpose better than Beck's paste or other substances, as it is always available close by, and it keeps its place even if the wound gapes. Certain precautions were found necessary with it, however. The article is illustrated and the encouraging experiments with the first fifty cases thus treated are reviewed. They thus cured 70 per cent. of ten cases of fracture of the femur, that came into their hands six, ten, twenty-seven up to ninety days after the fracturing wound. The cure was complete in nine, eleven, fifteen up to fifty-one days, an average of twenty-six days. Two of the other cases are still in treatment, and one healed spontaneously. In none of the series of fifty cases was amputation required, and there were no deaths.

49. Gas Gangrene.—Job and Roux relate that the perfringens seemed to be solely responsible for the gas phlegmons and gas gangrene in the eleven cases they have encountered.

Lyon Médical

January, 1918, 127, No. 1

51 *Vincent's Angina. Deglos.—p. 3.
52 Peptic Jejunal Ulcer after Gastro-Enterostomy; Three Cases. J. Guérin.—p. 12.

51. Vincent's Angina.—Deglos found twenty-one cases of ulceromembranous stomatitis, Vincent's angina, among 255 men with sore throat sent to his contagious diseases hospital. The men were usually young, and the onset of the angina had been insidious, but in all there was a swollen and painful gland at the angle of the jaw on the same side, and all seemed depressed and pale. The reds usually numbered less than normal, down to 3,000,000, the whites about 10,000. Bacteriologic examination is indispensable. The "fusospirillar" symbiosis was pure in all his cases. Good

results were realized by repeated application of a 10 per cent. solution of methylene blue after clearing out the contents of the ulcer and swabbing with a solution of silver nitrate. In certain rebellious cases a single intravenous injection of neosalvarsan, 0.3 gm. in 2 or 3 c.c. of double distilled water, led to the almost complete healing of quite deep ulcerations in from four to six days. A second injection four days after the first was followed by complete recovery in eight or nine days. Otherwise the stomatitis lasted up to several weeks in some cases notwithstanding vigorous local treatment.

Paris Médical

Jan. 26, 1918, 8, No. 4

53 *Contracture of the Hand. R. Dumas.—p. 55.
54 Technic for Heliotherapy. Cololian.—p. 69.
55 Gardening for Convalescent Soldiers. A. Subercaze and J. Galup. —p. 74.
56 *Siphon Sterilization of the Pleura. Costantini and Vigot.—p. 78.

53. **Contracture of the Hand.**—Dumas refers particularly to what is called Volkmann's contracture. It is absolutely irreducible even under anesthesia, the trouble being a retraction more than a contracture. He explains it as a lesion of the median and ulnar nerves; this entails the temporary or definite paralysis of the extensors of the last phalanges. They become sclerosed in time as they are thus immobilized, and this is what fastens the retraction so that it can be corrected only by an operation. Treatment should be applied before this stage is reached, and the treatment required does not differ from that for any similar nervous affection of the hand. After fracture of the arm at any point, or contusion or abscess or any trouble liable to injure these nerves, the physician should bear in mind the possibility of this type of contracture, and should examine the fingers every day to see that extension occurs normally. At the slightest sign of disturbance in the sensory or motor functioning of the small muscles of the hand, all causes of compression of the nerves must be removed without the slightest delay, the cast removed, the part dressed over again. The muscles menaced should be massaged twice a day if possible, and the flexor tendons stretched repeatedly in hyperextension. At night the fingers should be immobilized on a board in complete extension. The patient should keep repeating the useful active movements.

56. **Carrel Drainage of the Pleura.**—Costantini describes the technic for application of the Carrel-Dakin method to clear out and sterilize the pleural cavity.

Presse Médicale, Paris

Feb. 7, 1918, 26, No. 8

57 *Shock in the Wounded. E. Quénu.—p. 69.
58 *Typhus. L. Muratet.—p. 70.
59 Pseudo-Aneurysms. N. A. Dobrovolsky.—p. 72.

Feb. 14, 1918, 26, No. 9

60 Errors in Technic with the Wassermann Reaction. Leredde and Rubinstein.—p. 77.
61 *Reduction in Normal Transparency of the Apices in Tuberculosis. H. Lebon.—p. 78.

57. **Shock with War Wounds.**—Quénu urges in treatment of shock immediate amputation if the damage is such that conservation is out of the question. If conservative measures are possible, he advocates applying some substance that will keep the tissues in the status quo, possibly preceding it with some hypertonic fluid. In this way the man could be safely left undisturbed until he had recuperated from the state of shock, and then the operation could be done under more favorable conditions. Quénu mentions that the stretcher bearers say that the wounded are seldom in a state of shock at first, that is, within an hour of the wound. The immediate shock, the nervous shock, is comparatively rare. When it is encountered, the wise plan is to defer the operation until the shock and the effects of the chilling, the fatigue, loss of blood, etc., have worn off and the blood pressure has risen somewhat. Further loss of blood should be prevented, the vessel ligated and epinephrin injected. This should be done regardless of shock, and heat applied. Probably Mencière's guaiacol solution might answer for treatment of the wound to prevent absorption from it. (The formula for this was given March 23, 1918, p. 893.) Secondary shock is always complex; absorption of septic matters is superposed on the other elements of shock. Prophylaxis of shock and the arrest of developed shock are effectual only during the immediate or primary phases.

58. **Typhus.**—Muratet remarks that no case of typhus has been known in the French and British armies since the beginning of the war to date, but Netter recently reported six cases in civilians at Paris. This shows that typhus is a constant menace, and if a person with typhus should bring the germs to the trenches there might be a serious epidemic. Typhus should be suspected by the sudden stormy onset; the fever running up to 104 or even 106 F., keeping at this height without much remissions; the small weak pulse of 110 or 120; the congestion in all the mucous membranes and the conjunctivitis, the erythematous sore throat and the presence of red spots from 1 to 3 mm. in diameter on the palate. There may be from five to fifteen of these spots the first and second day; by the third day they blanch and disappear. The petechial eruption begins from the second to the fifth day; it can be brought out by scrubbing the arm or chest or applying a ligature to the root of a member, before any general eruption. The brain symptoms may be intense from the first, but the extreme prostration is a pronounced symptom, even in the abortive cases. Inoculation of a guinea-pig with 2 or 2.5 c.c. of blood from the patient will solve all doubts. The results with serotherapy are promising. The serum is obtained from a horse inoculated with spleen or suprarenal tissue from guinea-pigs with experimental typhus.

61. **Reduction in Transparency of Normal Lung.**—Lebon expatiates on the misleading findings possible even in the normal lung. The obese and persons with thick muscles are less transparent to the roentgen rays than others; if the apical regions are not fully transparent this need not imply a bilateral lesion. The apices may not dilate evenly on both sides during inspiration, and the right apex is nearly always less transparent than the left apex. Persons who have been long in bed may have an area of dulness over each apex, and the same factors responsible for this may render the apices less transparent. The difference in the size of the bronchi aids in rendering respiration asymmetrical. Hence a slight haze over the right apex, and exceptionally over the left, is not incompatible with the integrity of the lungs. Sometimes the clavicle interferes with roentgenoscopy, and only by having the patient cough can we get a glimpse of the apex as the clavicle is transiently lowered during the cough. Examination from the rear is more instructive. A radiograph of the apex alone, taken in apnea, with brief exposure, usually is decisive; roentgenoscopy alone may not suffice. Even with small lesions, revealed by auscultation, the roentgen findings may be negative. In Lebon's experience, positive roentgen findings were always accompanied by positive auscultation signs. He warns that a haze over both apices, without stethoscopic signs, is by no means a reason for assuming a tuberculous lesion. When one apex alone seems veiled, this is much more suggestive, but even this does not justify the diagnosis of tuberculosis if the stethoscope is negative. Only when the roentgen, auscultation and percussion findings harmonize, can we regard as certain the probabilities of a tuberculous apical lesion.

Progrès Médical, Paris

Feb. 9, 1918, 33, No. 6

62 *Shock. J. L. R. Berger and H. Vignes.—p. 49.
63 Factitious Jaundice. M. Dugardin.—p. 53.

62. **Shock in the Wounded.**—Berger and Vignes protest against the blanket term "shock" which adds an element of mystery to what is already clearly known. Instead of saying shock in the gassed, septicemic shock, shock from concussion, let us drop this vague term and speak only of the gassing, the septicemia, the condition after concussion, etc. As long as we depend on impressions rather than on carefully observed facts, there is little chance of learning the true essence of

shock and whether it is a definite entity, independent of the hemorrhage, the chilling, the pain and the emotional stress. The condition we call shock is remarkably like that from rapid anemia. The hemorrhage in the wounded is always profuse, and the intense emotion felt by the wounded, his inability to seek shelter, the pain, the chilling for hours, and the long trip on the stretcher, possibly also incipient infection—all these amply explain the difference between the condition after the simple hemorrhages of peace and the condition of the war wounded, without calling on any further morbid entities to explain the condition we call shock. Treatment should be addressed to the factors we are sure of: the chilling, the low blood pressure, with morphin and suprarenal extract, and lowering the man's head.

Revue Médicale de la Suisse Romande, Geneva

January, 1918, **38**, No. 1

64 *Carcinosis of the Lung. L. Bard.—p. 1.
65 *Forms of Uremia. F. Heim and J. Tchertkoff.—p. 15.
66 *Sacral Meningocele. S. Roux.—p. 47.

64. **Cancerous Lymphangitis of the Lungs.**—Bard says that very little has been published on generalized cancerous lymphangitis of the lung, but he has encountered several cases of it. The clinical picture is entirely different from that with lymphangitis from direct encroachment of the cancer, and also from that with cancer of the serous membrane without participation of the deeper tissues of the lung. It sometimes has been known to occur isolated, without any metastatic nodule in the lungs, and both lungs may be uniformly involved. The pleuropulmonary lymphatics form a converging apparatus different from that with any other organ, and the physiologic mechanism facilitates retrograde aspiration of the lymph into the entire system of lymphatics in the lungs, and thus the extension of the malignant process. Only two cases have been diagnosed during life, and it is probable that many cases have been overlooked at necropsy. In those two cases, a man of 39 and a woman of 36 had gastric cancer; the abrupt development of râles, cough and dyspnea suggested generalized lymphangitis, which was confirmed by the necropsy. There was some fever but not much leukocytosis. The pulmonary disturbances run a rapidly fatal course, sometimes in two or three days and never longer than three or four weeks, after the onset of the dyspnea which auscultation does not explain. Gastric cancer in the young usually runs a rapid course, with pains, and this generalized lymphangitis is one of its special features. The lymphangitis may prove puzzling if the primary tumor is not known. The rapid extension of the cancer toward the peritoneum explains the early involvement of the lymphatics. He has never encountered this generalized lymphangitis except with malignant disease of the stomach.

65. **Clinical Forms of Uremia.**—Heim and Tchertkoff emphasize the difference in the clinical picture when uremia is from retention of chlorids or from retention of urea, or there is pseudo-uremia from cardiovascular disturbance. With the latter, the symptoms are not due to retention of certain substances ingested or produced in metabolism, but they are the result of purely circulatory disturbance in the nerve centers, the arteriosclerosis in the kidneys being merely a local manifestation of the general arteriosclerosis. The clinical picture is thus a pseudo-uremia. They tabulate in great detail for comparison the symptoms of these three clinical forms of uremia. The first type, tending to convulsions, chloridemia, occurs mostly in the young; the true uremia, at all ages, and the pseudo-uremia after 40. Recovery is the rule in the first type; death is inevitable with true uremia, but the pseudo-uremia permits long survival. Treatment of the first type merely requires restriction of salt and water. In the second type, restriction of albuminous food and of salt, with copious intake of water. The third type, the pseudo-uremia, requires some restriction of fluids, with rest for body and mind, and eventually tonics and stimulants for the heart. Ten cases are described in detail to illustrate these various types and their possible coincidence. In the first type, the disturbances are essentially of a mechanical nature from the retention of salt and water. The disturbances in the second type, true uremia, are essentially toxic; urea and indican are the main toxic substances to be incriminated. The third type, the arteriosclerosis type, entails symptoms resembling those of true uremia, but they are merely the result of deranged circulation. It is not difficult to trace each symptom observed to one of these three types, with the indications for treatment which proceed therefrom. Detection of indican in the blood is a simple and certain means to reveal true uremia, and the writers' further experience has confirmed the reliability of their test for indicanemia. (It was described in The Journal, Oct. 6, 1917, p. 1206.)

66. **Anterior Spina Bifida.**—Roux states that an anterior sacral meningocele should be suspected when an elastic or fluctuating tumor, with a smooth surface, can be palpated back of the rectum or of the uterus, evidently fastened to the sacrum and without connection with the uterine adnexa. The symptoms are those of any tumor in the pelvis, compressing the rectum and bladder. Malformation of the sacrum is sometimes apparent and malformations elsewhere may give the clue. She has found twelve cases in the literature of the last sixty years, all in women from 19 to 36 years old, which she summarizes, and then reports in detail a case in a boy of 8. The meningocele was evacuated and the opening into the spine sutured with catgut and the walls of the cyst were excised, with favorable outcome. The pressure on the rectum had caused disturbances from birth. There were never any spontaneous formed stools, on account of the "stenosis of the rectum," and a kind of glove-stretcher instrument was used every day for a year to stretch the rectum. There was also some incontinence of urine during the day, never at night. The internists consulted ascribed the trouble to nervous factors or stenosis of the urethra, but examination under general anesthesia revealed the anterior sacral cyst.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 12, 1918, **48**, No. 2

67 *Pyelitis in Children. E. Wieland.—p. 33. Continued.
68 *Symptom of Atrophy of the Retina. A. Vogt.—p. 51.
69 *Tuberculous Ascites. L. Gelpke.—p. 55.
70 Ready To Use Ampules for Subcutaneous Injection. V. Kühne. —p. 56.

67. Summarized in The Journal, March 16, p. 817.

68. **Ophthalmoscopic Symptom of Atrophy of the Retina.**—Vogt expatiates on the valuable information to be derived from the use of a light free from red rays in examining the fundus of the eye. He gives five colored illustrations showing the difference between the sound and the atrophied retina in this light. It is possible thus to differentiate disease in the retina and optic nerve long before the retrobulbar neuritis shows in the papilla.

69. **Tuberculous Ascites.**—Gelpke warns against removing recent tuberculous effusions. All the patients operated on for tuberculous peritonitis within two months of its apparent onset have died, in his experience with 100 cases, and similar evil experiences have been reported by Thöne at Göttingen and from the clinics at Berne, Tübingen, Bonn and Heidelberg, all the patients dying sooner or later after the operative intervention. Clinical observation and animal experimentation, he declares, seem to render it highly probable that fresh tuberculous effusions contain some curative agencies. Only the old effusions, from three to five months old, should be removed. After they are removed there follows spontaneously a new, curative effusion. At least this is the view now held by many clinicians, and to which Gelpke has been converted by his experiences since 1896 in over 100 cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 10, 1918, **39**, No. 3

71 *Trophic Lesions in the Face. G. Talamo.—p. 27.

71. **Trophic Changes in the Face.**—Talamo's three patients were men and women from 42 to 60 years old. The left cheek was the seat of the partial atrophy in one case, and the condyles of the jaw in the oldest woman. She applied

for treatment of bilateral dislocation of the lower jaw. Both condyles had wasted practically away while the coronoid processes had greatly enlarged. The face had a myxedematous, waxy aspect, and there was cranial glaucoma with atrophy of the papilla. The hypertrophy of the coronoid processes seems to have been the primary disturbance. In the man, the lower jaw had enlarged. The chin during the last six months protruded forward in a peak and the condyles could be felt as abnormally small. The Wassermann test was positive in all. Talamo concludes from his study of these cases that neuritis of the trigeminal nerve is the primary cause, and that syphilis or some irritation of mechanical origin, is responsible for the neuritis.

Policlinico, Rome

Jan. 20, 1918, 25, No. 3

72 Epidemic Meningitis. M. Rizzi.—p. 54.
73 Present Status of Vaccination against Paratyphoid A. V. Forli.—p. 56.

Jan. 27, 1918, 25, No. 4

74 *The Work of the Modern Medical Clinic. V. Ascoli.—p. 81. Commenced in No. 2.
75 Nervous Sequels of Skull Wounds. G. Dragotti.—p. 87.
76 Abuse of Tincture of Iodin. A. di Sant'Agnese.—p. 89.

74. The Present Tasks of Clinical Medicine.—This article is the address delivered by Ascoli on assuming the chair of clinical medicine at the University of Rome as successor to Baccelli. He emphasized that the scientific study of the sick man plus social sympathy, fecundated with a passionate love of truth and intense altruistic zeal, are bound to ensure the success of any school of clinical medicine. The modern clinic is concentrating its energies more and more on the sick man. It is growing more refined, more human, it insists on more scrupulous hospital care, and it is participating more and more in the solution of social problems. For the exercise of such comprehensive and arduous functions, the physician requires capacity and trained powers of observation in the organic and psychic fields; a wealth of scientific knowledge and a trained memory; lively imagination and a severely critical spirit; ethical and social sentiments, prompt decision and practical common sense. The practice of the profession harmonizes and balances these various elements.

Riforma Medica, Naples

Jan. 19, 1918, 34, No. 3

77 *Mercurial Treatment of Nervous plus Renal Syphilis. C. B. Farmachidis.—p. 42.
78 *Suppurative Paranephritis Following Tonsillitis; Two Cases. R. Botteselle.—p. 44.

Jan. 26, 1918, 34, No. 4

79 *War Nephritis. A. Ceccni.—p. 62.
80 *Iodin Urine Reaction. C. Pezzi and V. Forli.—p. 68.
81 Mouth Infection and Metastasis. B. de Vecchia.—p. 71.

77. Specific Treatment of Endocranial plus Renal Syphilis.—The symptoms from the diseased kidneys suggested at first that the cerebral symptoms were from the uremia, but the symptoms pointed to a tumor in the cerebellum and the positive Wassermann reaction called for specific treatment. The coexistent renal symptoms warned of the necessity for caution, but they subsided along with all the other symptoms under vigorous mercurial treatment. Concomitant kidney lesions therefore need not always be regarded as contraindicating mercurial treatment of syphilitics. It is imperative, however, to keep constant watch over the urine, and to commence with small doses.

78. Paranephritis after Tonsillitis.—Botteselle says that in two cases described, no other cause for the suppurating process in the adipose capsule of the kidney could be discovered except the tonsillitis just before. The patients were two young women and the staphylococcus was found in one, the streptococcus in the other.

79. War Nephritis.—Ceconi found a history of recent tonsillitis, acute articular rheumatism or severe chilling in a large proportion of cases of acute nephritis in soldiers on active service; in others there was pyorrhea, otitis or furuncles, but in fully 50 per cent. of the cases nothing could be found to throw light on its origin, notwithstanding its more or less epidemic character. Influenza, intestinal infection, food deficiencies and a preceding catarrhal cystitis—none of these could be actually incriminated in his cases. There is much to sustain the assumption, he thinks, that the war nephritis is a hitherto undescribed infectious disease. It seems to have been known in Russia in times of peace, and also during preceding wars. Some recent German writers on the subject are inclined to regard it as the work of the same germs which are responsible for the acute edema without albuminuria which has also been observed in almost epidemic form in some regions. The blood vessels seem to bear the brunt of the attack, and the vascular lesions are liable to retrogress completely with early and complete recovery in both these diseases. In conclusion Ceconi queries whether there may not be some connection between typhus, relapsing fever and these epidemics of acute edema and acute nephritis, besides their sharing certain factors of privations and vermin.

80. The Iodin Urine Reaction.—Pezzi and Forli were never able to obtain Petzetakis' iodoreaction in urine from healthy persons, or it was so faint as to be negligible, as also in most acute febrile diseases. In typhoid and paratyphoid, on the other hand, it was pronounced, and this occurred early in the disease. It thus has differential importance for the early diagnosis, while the technic is simple and easy. The reaction is often positive also in tuberculosis but it rarely happens that these two diseases are liable to be confused. To about 15 or 20 c.c. of filtered urine in the test tube are added 3 drops of a 5 per cent. alcoholic solution of iodin. The tube is lightly agitated until the reagent mixes with the urine in the upper part of the column of fluid for about 2 cm. With a positive reaction, the upper part of the fluid turns bright yellow, the tint more or less distinct but always clearly defined against the fluid below. With a negative reaction there is no change in tint.

Rivista di Clinica Pediatrica, Florence

January, 1918, 16, No. 1

82 Visceral Syphilis in Sixteen Young Infants. G. Menabuoni.—p. 1.

Archivos Españoles de Pediatria, Madrid

November, 1917, 1, No. 1

83 *The Throat and the Skin in Scarlet Fever. M. Vargas.—p. 3.
84 *Disease of the Tibial Tubercle. A. L. Duran.—p. 17.
85 Enterococcus Otitis Media. C. J. Encina.—p. 44.

83. Treatment and Prophylaxis of Scarlet Fever.—Vargas has for years been treating the throat and skin in scarlet fever with a technic something like Milne's, but, he thinks, superior to the latter. When the treatment is systematically applied, the other children in the house do not contract the disease while the sick child is soothed, and rendered more comfortable. The throat is gargled every three or six hours or is swabbed out gently with a tepid mixture of 5 gm. sodium biborate; 100 c.c. of hydrogen dioxid of 10 volumes, and 400 gm. boiled water. After the gargling the mucosa is gently swabbed with a mixture of 0.1 gm. phenol; 0.01 gm. mercuric chlorid in 10 gm. each of water and glycerin. Three or four times a day a few drops of mentholized oil or phenolized liquid petrolatum are instilled into the nose. A teaspoon can be used for this if the child is unruly. Equally important is the sterilization of the skin, and for this he anoints the eruption patches with washed lard, containing 0.5 gm. thymol and 1 gm. phenol to 50 gm. of the lard. As the lard melts it absorbs more heat than other fats while the scales laden with the lard are not so apt to float about in the air. The children feel so much better from the anointing that they clamor for it. A cleansing bath is given every two days. Not only in his hospital service but in private homes with six or eight children, there has been no contagion from the primary cases given this treatment.

84. Lesions of the Tibial Tubercle.—Duran gives thirty-three roentgenograms. In six of his fourteen cases a detailed

roentgen study was made. Thirteen of the patients were encountered among the 6,500 patients at the public orthopedic surgery service of the Instituto Rubio at Madrid. The first symptoms had been observed from six weeks to four or five years before when he first saw the child. All complained of pain in the tubercle of the tibia, aggravated by walking or jumping and by palpation, and flexing the knee to the utmost was extremely painful. The tubercle region was always somewhat protuberant and sometimes quite hard and unduly warm, but there was never redness or fluctfiation. The ages ranged from 9 to 21 and all were males except three. In five cases the lesion was bilateral, and in seven cases there was no history of trauma of any kind, and none of the patients played football or took part in other rough sports.

Violent contractions of the femoral quadriceps probably interfere with the circulation in the region, and the ossifying cartilage suffers. The consequence is an abnormal ossification of the cartilage of the tubercle, so the anomaly should be known as osteochondritis of the tibial tubercle or the tibial apophysitis of adolescents. The name of Schlatter's disease should be limited to cases of actual fracture of the tibial tubercle. Most writers agree that treatment should be restricted to immobilization with massage and mechanotherapy, but this takes from a month to two years; it has always proved successful in time. Duran preferred incising the soft parts over the tubercle for 2 or 3 cm., down to the bone, and then rapidly scraping the bone and suturing the skin. The whole procedure took less than ten minutes under general or local anesthesia, and all disturbances subsided in two weeks thereafter. He had applied conservative measures before, without benefit, and did not want to have to keep them up for a year or two longer.

Cronica Medico-Quirurgica, Havana

January, 1918, 44, No. 1

86 *Postoperative Results of Cataract. J. S. Fernandez.—p. 8.
87 *Filaria Hematuria. R. G. Lee.—p. 15.
88 *The Cardiorespiratory Syndrome in Rachitis. C. M. Garcia.—p. 18.
89 *Starvation Treatment of Diabetes. R. G. San Martin.—p. 20.
90 Inefficacy of Autogenous Vaccine Treatment of Trachoma. J. M. Penichet.—p. 22.
91 The Glands with an Internal Secretion. A. M. Crispin.—p. 26.
92 Sclerocystic Ovaritis. E. R. de Aragon.—p. 30.

86. **Cataract Operations.**—Santos Fernandez reviews the research to date on the pathogenesis of cataract, in search for ways and means to ward off secondary, postoperative cataract. The traumatism of the operation is probably responsible for the changes in the nutrition of the parts which seem to entail the secondary cataract.

87. **Filarial Hematuria.**—Lee has encountered eighteen cases of filariasis inducing hematuria, and reports excellent results from treatment with potassium iodid. He gives it in a solution of 32 gm. potassium iodid in 60 gm. water. Before the principal meals 5 and 6 drops are taken in two tablespoonfuls of water. These doses are increased by 5 drops at a time, until the patient is taking 40 and 50 drops, under constant supervision, reducing the doses on signs of intolerance. In some cases he reached the dose of 300 drops morning and evening. All the patients were cured with the exception of one still under treatment.

88. **The Cardiorespiratory Ratio in Rachitis.**—Garcia describes a typical case of subacute rachitis in a boy of 3 in which the puzzling symptoms were explained by the abnormal ratio between the heart beat and the respiration. The ratio in this case was 2:1 instead of the normal 4:1. This is Hess' sign of rachitis, and it gave in this case the clue to the phenomena.

89. **The Skin in the Starvation Treatment of Diabetes.**—San Martin has often found that the pruritus increased during the starvation days, but it then invariably declined and sometimes it disappeared completely when the patient kept within the tolerated diet. In one case of rebellious pruriginous eczema of the prepuce for eight years, in a diabetic of 40, rebellious to all treatment, the eczema subsided during the starvation days and did not return when the tolerated diet was gradually resumed. A woman of 65, diabetic for fourteen years, had had for a year a number of congested and pigmented patches, which itched intensely and there was desquamation in some. These patches became intensified during the starvation days and for two weeks after the urine had been cleared of sugar. Then the skin returned to normal. Later there was an attack of intercostal zona with a tendency to necrosis. She reduced her diet as a precautionary measure, but there was no recurrence of the diabetic symptoms and her skin soon recuperated and threw off the herpes zoster as if full of vitality.

Prensa Medica Argentina, Buenos Aires

Dec. 30, 1917, 4, No. 21

93 The Glands with an Internal Secretion. A. M. Crispin (New York).—p. 279.
94 *Blood Cyst in the Kidney. D. del Valle.—p. 280.
95 Venereal Granuloma Yielding to Antimony. A. H. Roffo and J. T. Zarate.—p. 283.
96 *Pituitary Body and Polyuria. B. A. Houssay and L. Romaña.—p. 284.

94. **Blood Cyst of the Kidney.**—Del Valle comments on the rarity of large blood cysts of the kidney. Israel reported only one in 297 operations on the kidney, and Albarran in twenty years of kidney surgery encountered only twenty-four. In a case reported, with the naked eye and microscopic findings, the man, a field hand of 48, had always been healthy until pain and swelling in the flank had attracted attention, two months before. On the assumption of an echinococcus cyst the tumor was removed through a transverse incision. The cyst was shelled out in its own capsule after incising the kidney capsule. There was considerable hemorrhage but several deep sutures were taken in the parenchyma cavity and except for hematuria for a few days smooth recovery followed. In practically all the other cases on record, nephrectomy was done, and Del Valle emphasizes the facility and good results with the technic he followed, saving the kidney.

96. **The Pituitary Body and Polyuria.**—Houssay and Romaña report the results of extensive experimental and clinical research on the action of pituitary extracts. In different concentrations and in different species they seem to have a vasoconstricting action on the kidneys sometimes, and sometimes a vasodilating action. Nothing observed sustains the assumption that polyuria is the result of pituitary insufficiency, or that the active substances—such as are found in the pituitary extracts—pass into the cerebrospinal fluid. Puncture within a small area of the base of the brain constantly induced polyuria, but not outside of this area, and the pituitary body is not included in this area. The final conclusions are against the assumption that hypersecretion of the pituitary body is responsible for polyuria.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

November, 1917, 25, No. 11

97 *History of Syphilis in Brazil. E. Rabello.—p. 409.
98 "Cholelithiatics" and "Nephrolithiatics." L. Ribeiro, Jr.—p. 428.

97. **Syphilis in Brazil.**—Rabello is inclined to doubt the prehistoric existence of syphilis in Brazil, and cites evidence against it. He urges the necessity for a systematic campaign against syphilis along the lines adopted in the United States, England and elsewhere.

Revista de Medicina y Cirugia Practicas, Madrid

Dec. 28, 1917, 41, No. 1488

99 The Lafora Symptom—Itching of the Nose—Early in Meningitis. G. G. Urdiales.—p. 441.

Jan. 7, 1918, 42, No. 1489

100 *Cure of Paraplegia from Rupture of Posterior Vertebral Ligament. A. M. Perez.—p. 5.

100. **Paraplegia from Rupture of Common Ligament.**—Perez ascribes to F. Rubio of Madrid the first description of the characteristic curvature of the spine which results from rupture of the posterior common ligament. It differs entirely from the curvature with Pott's disease, etc., and there is

always a history of sudden pain in the back coming on after some extra physical exertion or trauma. One woman developed the paraplegia while dancing. Rubio's law of the morbid responsibility of the tissues links the paraplegia with the rupture, the phlegmonous focus, and the spread of this to the meninges and thence to the spinal cord. Perez gives no further differentiating points, but describes in detail a case in a young man who had been hit in the shoulder by a falling tree. The paraplegia had confined him to bed for six months but the bladder sphincter was not paralyzed. In such cases Rubio felt at liberty to guarantee a cure—like a quack—and Perez did the same, contingent on the perseverance in the course of treatment which consisted merely in suspension in a Sayre apparatus and plaster cast. He gave nux vomica in progressive doses, at the same time, to combat the tendency to paralysis in the digestive tract, with electric treatments. In eight months the man was walking with crutches, and by the end of the year was able to walk almost normally for long distances with only a light cane.

Semana Medica, Buenos Aires

Nov. 22, 1917, 24, No. 47

101 *Mycetoma in Argentina. E. F. Solari.—p. 573.
102 Hygiene of the Eyes. P. B. Ferro.—p. 582.
103 High Infant Mortality Last October. E. R. Coni.—p. 586.
104 Osteoplastics on Frontal Sinus. J. B. Ahalos.—p. 587.
105 Care of Sick and Poor at Buenos Aires. E. R. Coni.—p. 590. Continuation.

Nov. 29, 1917, 24, No. 48

106 The Obstetrician. J. C. Llames-Massini.—p. 601.
107 Ectasia of Aorta after Rheumatism. J. C. Navarro.—p. 604.
108 Research on Anilinarsenic Acid. J. A. Sanchez.—p. 609.
109 *Acute Dilatation of the Stomach. P. O. Bolo and A. G. Gallo.—p. 611.
110 Infection from Books. C. Wassermoos.—p. 621.

101. **Mycetoma in Argentina.**—Solari describes in detail the first case of Madura foot observed at Rosario. A fungus was cultivated from the tissues; it evidently belongs to the order of hyphomycetes.

109. **Acute Dilatation of the Stomach.**—Bolo and Gallo opened the abdomen and after removal of five liters of a blackish fluid from the dilated stomach, applied posterior gastro-enterostomy. The patient was a woman of 54 with two healthy children. The acute dilatation of the stomach developed suddenly without known cause, sudden and intense pain being the first sign of trouble. The laparotomy followed three days later. The woman vomited repeatedly in the interval, a blackish vomit.

Siglo Medico, Madrid

Dec. 29, 1917, 64, No. 3342

111 Renal Lithiasis. A. P. Martin.—p. 982.
112 Morphology of the Trachoma Bodies. F. Mas y Magro.—p. 985. Conclusion.
113 *Plantain Flour for Convalescents. J. S. de Figueroa.—p. 988.
114 Prophylaxis of Criminal Abortion. J. Canseco.—p. 989.
115 Pemphigus in the Newborn. Sicilia.—p. 991.

113. **Plantain Fruit Flour in the Diet of Convalescents.**—The plantain, *Musa paradisaica*, bears a fruit very much like a banana, and de Figueroa extols the advantages of the pulverized pulp as a nutritious and easily digested flour for convalescents.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Dec. 22, 1917, 2, No. 25

116 *Osteomalacia. J. F. Selhorst.—p. 2176.
117 *Mammary Cancer and Marriage. H. T. Deelman.—p. 2187.
118 *Separation of Inferior Epiphysis of Femur. C. Hijmans.—p. 2193.

Dec. 29, 1917, 2, No. 26

119 *Roentgen Treatment of Eczema. E. Penso.—p. 2235.
120 Dental Dispensaries. G. H. Bisseling.—p. 2237.

116. **Osteomalacia.**—In the case described, Selhorst diagnosed osteomalacia although the pelvis seemed normal. The osteomalacia had developed in a previously healthy woman during a pregnancy and had returned during the next pregnancy. The first symptoms were pain and disturbances in the gait. Contracture of the adductors of the left leg followed. Phosphorus was given perseveringly, trusting to Latzko's positive statements that every case of osteomalacia can be cured with phosphorus, even the gravest cases. When finally all hope from the phosphorus was given up, and the ovaries were removed, unmistakable benefit was manifest. But—probably from the excessive administration of phosphorus—a hematoma and later an abscess developed in the leg, with decubitus and death in a few weeks. The general and local improvement after castration was so pronounced that Selhorst is convinced that the woman might have been saved if it had been applied earlier. The over-long use of the phosphorus evidently damaged the heart, kidneys and blood picture. This is the second case of osteomalacia published in the twenty-five years before 1913 in the clinics for women in the Netherlands, but in the three years, 1913 to 1916, twenty-three cases have been reported but none in connection with pregnancy. The history of osteomalacia is reviewed and various theories are discussed. The present conception of the disease is a return to Kilian's description of it in 1829 as being restricted to pregnant women previously healthy and of slender build. No characteristic microscopic findings have been demonstrated in any organs, not even in the ovaries, although their connection with the osteomalacia seems beyond question. Perfected technic may reveal changes which now escape us.

117. **Mammary Cancer and Marriage.**—Deelman tabulates the Amsterdam statistics in regard to the mortality from mammary cancer at various ages in the married and the unmarried since 1869. The conclusions from the data presented, as also from the 1913 report of the British registrar of births, deaths and marriages, are to the effect that mammary cancer occurs proportionately more frequently in the unmarried than in the married. At the height of the reproductive phase more married women seem to be affected than the unmarried, but, after 40, the unmarried much predominate. Nothing was found to sustain the assumption that mastitis induces a predisposition to cancer. After the fortieth year there are five married women to every unmarried woman, which readily explains the apparent predominance of mammary cancer in married women, as there are so many more of them. But calculating by percentage of each group, the predominance is altogether on the side of the unmarried.

118. **Traumatic Separation of Epiphysis.**—Hijmans gives illustrations of a typical case of traumatic separation of the inferior epiphysis of the femur in a boy of 16. The epiphysis had tilted up and lay parallel to the femur, causing the knee to bulge. Under ethyl chlorid anesthesia and strong extension the knee was flexed more and more while the loose epiphysis was manipulated until it finally sprang back suddenly into place. When the knee was straightened the epiphysis became dislocated anew, so the joint was immobilized in this extreme flexion. The plaster cast included the pelvis and the entire leg. The flexed knee in its cast was suspended by a rope and heavy weight just above the knee from an upright standard. The foot was warm; the circulation before had been somewhat obstructed by the pressure of the displaced lower end of the femur on the vessels in the popliteal fossa. By the end of the third week the upper part of the plaster cast was removed, leaving merely an open cast below the knee in which rested the leg and foot. The supporting loop of rope was moved gradually farther down on the leg which reduced the bending of the knee. Massage and exercise were then begun and by the end of the eighth week the boy was using his leg normally, and soon returned to his military academy. At first there was a tendency for the knee to keep flexed all the time, but this was corrected by laying a bag of sand on it for a while.

119. **Chronic Eczema.**—Penso has been giving from one to eight roentgen exposures in twenty-eight cases of chronic eczema which had proved refractory for from one to fifteen years to other measures. He gave a 1 ¼ H unit exposure and states that 50 per cent. seem to be completely cured. This represents 70 per cent. of those who returned for the entire course. He computes the cost of the salves and dressings previously used in these cases, and estimates that roentgen treatment is from 400 to 15,000 times the cheaper treatment.

Hygiea, Stockholm

Dec. 31, 1917, **79**, No. 24

121 *To Detect Simulation of Deafness. H. Nordlund.—p. 1361.

Jan. 16, 1918, **80**, No. 1

122 *Serotherapy of Scarlet Fever. C. Kling and G. Widfelt.—p. 2.

121. **Simulation of Deafness.**—The long list of measures that have been proposed to detect malingering in regard to the hearing shows that none of them is absolutely reliable. Nordlund describes fourteen methods based on speech; eleven tuning fork or similar methods, and seven methods for detecting bilateral deafness. Few attempt to simulate absolute bilateral deafness; if it is attempted, the Gowseef method or the Kindlmann method is instructive. With the former, the man's back is brushed with a brush or the hand or both. Then the investigator uses only one on the subject and the other on his own coat, brushing his own coat with the brush or hand while the subject's coat is brushed with the other. The sound and the touch combine so that the normally hearing are unable to tell whether the hand or the brush is being used on their own backs. The deaf person, not hearing the sound on the other person, is able to tell by the sensation on his own back which is being used. Unilateral deafness is tested best, perhaps, with the Lombard-Bárány method, that is, the use of an apparatus that produces a noise intermittently while the subject is reading aloud in his ordinary voice. Unconsciously he raises his voice and loses control of it when he hears the noise of the automatic drum. It may be necessary to apply a number of the tests to detect the simulation; if all give concordant results, they may be accepted as conclusive.

122. **Treatment of Scarlet Fever with Convalescents' Serum.**—Kling and Widfelt's success with this treatment has already been heralded by cable as the "triumph of serotherapy." During the last seventeen years at Stockholm there have been annually from 291 to 1,865 cases of scarlet fever, and the mortality has ranged from 1.45 to 8.63 per cent. In 1916 the disease became unusually prevalent and the death rate was 14.7 and 11.5 during two of the earliest months. Within a year there were 2,165 cases and many were of a malignant type, in both children and adults. In this epidemic they began to use convalescent serum in the severest cases, and it soon became apparent that it was effectual, but mainly in the serious toxic cases. It had comparatively little influence in warding off or curing complications. Of the 237 given this treatment all recovered except 10.5 per cent. who died early in the treatment and 7.2 per cent. who succumbed later to complications. The total mortality was thus 17.7 per cent. while the mortality in a corresponding group of 91 severe cases not given serotherapy was 70 per cent.

In the severe toxic cases, the patients in delirium or stupor when the serum was injected towards night, it was almost impossible to recognize the patient in the morning, as he was lively and sitting up and feeling almost well. The convalescents seeing this remarkable change for the better in the sick given their serum, gave their blood gladly for the purpose, the adults first, and the children followed their example without fear. It seemed to be immaterial whether the attack had been a mild or severe one; the serum from all seemed to be nearly equally effectual, but some difference was apparent in the date when the serum was taken. Good results were obtained in 70 per cent. of the convalescents' serums from the fourth week; with 58 per cent. at the fifth week; 65 per cent. at the sixth week, and 60 per cent. at the seventh week. Of the 186 convalescent serums, 111 were used alone; the other serums were mixed. Over 93 per cent. recovered of those treated the second day of the disease; all of the three treated the first day; 88.8 per cent. the third day; 76.9 per cent. the fourth day; 50 per cent. the sixth; all but one of the eight treated the seventh day, and the one patient treated the ninth day, but the one treated the tenth day died.

The serums were generally 1 or 2 weeks old when used but sixteen effectual serums were 3 weeks old; six, 5 weeks; three, 6 weeks; two, 7 weeks, and three, 8 weeks old. The blood was drawn from a vein in the back of the arm, a lightly constricting band applied above, the donor opening and closing his hand to promote the flow and the arm massaged besides. The blood is drawn into an Erlenmeyer jar with a capacity of 500 c.c. By this means it is easy to obtain through a large puncture needle 200 or 300 c.c. from an adult, with children 200 c.c. was the limit. This generally yields on standing for forty-eight hours from 50 to 150 c.c. of serum. It is distributed in vials of 25 c.c. capacity, and phenol is added in the proportion of 0.5 per cent. This was calculated by using a 5 per cent. solution of phenol and adding one ninth of the volume of the serum after 1 c.c. has been taken for the Wassermann test. The serum in question is tested further to ensure its sterility, both with bouillon and agar cultures. A positive Wassermann reaction was obtained in ten of the 196 serums tested. The vials of the prepared and tested serum are plugged with a rubber stopper and set on ice till needed.

A number of other data of various kinds are tabulated for comparison, and several typical cases described in detail. One case was that of a young woman with temperature of 105.8, pulse 140 to 160 and weak, delirium and cyanosis. The serum was given the second day after the stormy onset and the next day the general condition was transformed, the temperature normal, pulse down to 84. Typical desquamation followed in about two weeks. Before the serotherapy, 50 per cent. of cases of this kind terminated fatally. In 101 of the 195 cases proceeding to recovery under the serotherapy the temperature dropped rapidly in this way and the general condition showed remarkable improvement. The effect was similar but less rapid in fourteen other purely toxic cases. In the eighty cases with complications, this rapid success was never observed, the benefit becoming only gradually evident. One of the tables compares the mortality in the complicated cases without and with serotherapy, the percentage being with lymphadenitis 17.7 and 2.8 per cent.; with otitis media, 15.5 and 0 per cent.; with mastoiditis, 4.4 and 1.4 per cent. With seven cases of nephritis in the untreated, the mortality was 2.2 per cent., while in the forty-four cases in the treated group, 3.1 per cent. died. The proportion of cases with complicating nephritis was 20.7 per cent. in the treated group, and 21.5 per cent. among the 1,928 not given the serotherapy. The serum was injected by the vein alone in some cases, in the others, both intravenously, intramuscularly and subcutaneously.

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Jan. 10, 1918, **80**, No. 2

123 *Treatment of Contracture of the Elbow. H. Abrahamsen.—p. 45.
124 Living Expenses of Average Danish Family. P. Heiberg.—p. 56.

123. **Contracture of the Elbow.**—Abrahamsen refers to flexion contracture from cicatricial shortening of the soft parts or contracture from overlong immobilization. A foreign body irritating the biceps or its innervation may entail contracture, as also a neuroma on a sensory nerve inducing reflex disturbance. In one such case removal of a bullet at the median margin of the biceps cured the contracture flexion of 90 degrees in the elbow. The most favorable position for a stiff elbow is a right angle. He remarks that about 33 per cent. of all the wounded have been wounded in the arm, and the functioning of few joints is so indispensable as the elbow. Early use of the elbow to ward off ankylosis and contracture is now the accepted principle in treating wounds in this region. When contracture is already installed, cautious correction under general anesthesia, followed by a cast, may be indicated. It is better to proceed gradually and not attempt to make the entire correction at one sitting, but waiting a week or two before resuming the attempt. He warns against forcible correction as this may arouse old troubles or induce local hemorrhage. Four cases are described in detail; one shows the fine result that can be obtained sometimes with persevering conservative measures alone. This case also teaches the danger of waiting too long before exercising the arm after a fracture. A splint was worn for six months. In a second case all that was necessary was to sever the cicatricial tissue at one point. The other cases required plastic lengthening of the tendon.